













# Barriers down in quest for a social strategy



The Cabinet paper—the Joint Approach in Social Policy—contains two sets of proposals. One is designed to improve the way social policy decisions are taken, and to provide better information to back them up. The other concerns investigations into specific policy areas which overlap departmental boundaries.

First, however, the paper lists the obstacles any government encounters in trying to put together a coherent strategy for social policies which can be effectively implemented. These include the perennial scarcity of resources, economic constraints, an always overcrowded legislative programme, and the slowness with which both central and local governments adapt to change.

The main objective is seen as eliminating social injustice, but much of the emphasis is on the control of public spending. Because government spending, particularly on social programmes, has been growing faster than production as a whole, the paper argues, successive governments have been spared the need to make agonizing decisions about low-priority programmes. Unreal expectations have been generated about the scope for social programmes. And there has been little incentive to improve the efficiency of existing policies and programmes.

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"This cannot go on. The economic situation over the next few years imposes new constraints on public spending. This will mean cutting back on some plans in the social field, as elsewhere. The present government, which has taken or promised some major new social initiatives, now needs to consider how these and existing policies can be accommodated within some more coherent whole."

"If the structure of social expenditure is not to become increasingly arbitrary, some better basis is needed for defining priorities. This will be necessary even if public expenditure constraints are eased somewhat in the longer term."

"Ministers also need to ensure that their priorities are adequately reflected in policies which are actually being carried out; and that in practice these policies are having the effects intended."

"Social policy can be taken to cover almost anything. The paper, while insisting that poverty is its main target, lists the following areas as coming within the scope of its brief: income support programmes; personal social services, health, housing, education and training, employment policy and environmental policy. Most of these are relevant not just to the poor or deprived, but to the population as a whole. Any strategy for poverty must, therefore, be consistent with social

The Joint Approach to Social Policy proposals are a radical new departure in the way government is carried on. They can be seen as an attempt to do for social policy what was achieved over decades in the economic sphere: centralized control and coordination.

But although the proposals are new, the concern they inspired is not. This is twofold. One follows from the recent phrase by Mr Anthony Crosland, the Environment Secretary, that "the party's over now"—the need to control and restrict government spending on social policy programmes. As far back as 1938, an attempt was made to get an inner Cabinet committee to decide on social service spending priorities, but this was cut short by the war. (Unlike the present plan, it would have deliberately excluded those ministers whose spending was being decided.)

And nearly 15 years ago, Lord Roper's 1961 report on the "control of public expenditure" said: "Public expenditure decisions should never be taken without consideration of (a) what the country can afford over a period of years; (b) the relative importance of the various areas of expenditure



Likely members of the social services "inner cabinet" are the Prime Minister as chairman and heads of the departments concerned—Anthony Crosland (Environment), Roy Jenkins (Home Office), Denis Healey (Treasury), Michael Foot (Employment), Barbara Castle (Health and Social Security), and Reg Prentice (Education and Science).

policy towards the community as a whole, the paper argues.

The defects in the present way of making social policy are summarized as:

● Too little systematic thinking in central government, and a tendency to react to events as they happen.

● No proper information about the relative needs of different social groups. There is also little information about the way policies and programmes affect some groups in the population more than others—the distributional effects.

● Most social problems cross departmental boundaries, which makes it difficult for governments to see and deal with people "in the round".

● The unsatisfactory nature of the relationship between central and local government.

—the divided responsibilities in Whitehall clash with the trend towards corporate management at the local level.

—the attempt by central government to fix priorities is in conflict with the trend towards giving local authorities greater discretion. One of the consequences of this may be a tendency for central government to move away from providing goods and services to specific cash payments, the amount of which can be more easily controlled.

—the wide variations in local standards of service.

● The failure of many policies of the point of delivery—the low rate of take-up, for example.

● The lack, in many social programmes, of clearly defined, quantified, operational targets.

A programme for action.

The JASP programme rests on one key assumption: "that if a 'joint' and more coherent approach to social policy is to have any chance of succeeding, departments and ministers must be prepared to make some adjustments, whether in

## Steps on the way to coordination

against another. This may appear to be self-evident, but in administrative (and, we would hazard the opinion, in political) terms it is not easy to carry out."

The other side of the coin is the need to ensure that what is spent is used to the best overall effect. This means, in particular, eliminating waste and overlap between departments, and ensuring that those at whom social programmes are directed do in fact benefit from them (this was not the case, for example, with house improvement grants).

The network of services and departments that now make up the DHSS—now one of the principal supporters of JASP—have always been the strongest candidates for a coordinated approach. And the present department, one of the joint creations of the late 1960s, was put together largely with this in mind. The super department drew attention to the departments that did not serve them, either administratively or politically. Even within departments, civil servants still fight for their corner.

When the late Mr Richard Cross-

man became Secretary of State for Social Services in 1968, he appointed a secretary to help him in his "overload" functions. But the secretary barely had time to start work before the 1970 election swept him, with the Labour Government, into office. The rump of that administration eventually ended up in the Cabinet Office as the social research coordinating unit. As such, it has been in on the discussions and working parties which led to JASP.

Under the Conservatives, the question of coordination headed up in the top of the Central Policy Review Unit (CPRU), the "think tank" created by Mr Heath with Lord Rothschild in charge. Before coming up with the JASP proposals, the "think tank" had submitted two proposals, which, unlike the present one, had not gone to the permanent secretaries for their approval before going on to ministers.

The first of these was simply a suggestion that all expenditure proposals from all spending departments should be added together and then the total reappropriated between them on the basis of agreed

priorities. It was an attempt, in part, to find a formula for limiting the expenditure of certain departments.

The second proposal, again put up by Lord Rothschild—the "buckaroo" as one senior civil servant put it—was based on the idea that the social policy should be looked at not from the point of view of the institutions making and administering it, but from that of the social groups who might be benefited by it. It was a radical idea, and it was not until the late 1970s that it was taken up.

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Cooperation between ministries is the key to a new approach, outlined in the confidential Cabinet paper, for deciding how best to allocate money among social services

families applying for temporary accommodation, air pollution, crime and aid.

Thirdly, changes in the resources to help particular social groups. The statisticians would also be expected to work in the distributional impact of government policies, and to produce "fact sheets" about specific groups of current concern to policy-makers. Much will depend on having statistics which are already available in different departments.

Short-term studies of particular social policies. The paper lists five areas, and gives examples of the types of topics within those areas that might be selected for study.

"Financial poverty". Suggested areas: income support programmes, thresholds, and means-tested benefits for which responsibility lies among the DHSS, Inland Revenue, DOE, DES and the Treasury.

Working relationships between central and local government. The paper sets out the arguments that should be discussed in the Layfield Committee's report, since "further work will be needed on developing Whitehall a more coordinated relationship with local authority proposals than more than one department".

Interdepartmental problem areas. Short list is suggested: social housing policy; women at work; on child care and the common policy between departments and legal and other aid, education information services.

Studying a specific social or client group, such as the disabled or working women.

6 Departments and ministers must be prepared to make some adjustments, whether in priorities, policies, administrative practices or allocations. 9

Longer-term studies. The aim is to identify current developments which could significantly affect policy in the next 10 to 15 years. Examples are: the possible long-term decline in the birth rate; the changing status of women in the workforce; the effects of the new capacity and willingness of the local community to care for its own social casualties; changes in the distribution of population in Britain.

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# NUS disappointed by 22pc grants rise

Increases of up to 22 per cent in student grants were announced this week by Mr Reg Prentice, the Education Secretary.

Students living away from home in London will get a maximum of £810 (£665 at present); those at other universities and colleges will get up to £740 (£605); and those living at home £570 (£475).

The new rates apply from September and will cost an extra £44m. This brings the total cost of student grants to about £24m. They cover students on degree and comparable courses, trained teachers and those studying for HNDs and DIPHEs. Students at colleges of education will get free board and lodging of up to £135 (instead of the current £26).

Another change, made appropriate enough during International Women's Year, abolishes sex discrimination. Married women students will now be treated the same as married men, but both will have their grants assessed on their parents' income unless they are over 25.

This amendment was attacked by the National Union of Students. It will now, married women students will be regarded as independent of their parents if they were over 21. Married men were independent no matter what age. In future both will be regarded as dependent up to 25.

The starting point for parents' contributions will be increased from £1,600 to £2,200. The new rate is a 33 per cent rise. It is thought that a 33 per cent rise is likely, from £7.50 a week to £10.00. University vice-chancellors said students would be in difficulty because the increase in their grants had been tempered by the restrictions on public expenditure. Students would make up the deficiencies by vacation jobs.

The Vice-Chancellors' Committee said they were concerned that this would leave little time for vacation study which might "improve the contribution of our intensive three-year degree course".

Those whose income is above £300 will pay the same as now. Allowances for school fees, counselling payments and further education expenses of other dependent

children will be withdrawn. Music students now join the select group of trainee doctors, architects, engineers, vets and domestic science and physical education teachers in qualifying for an extra £30 for special equipment. The NUS said this extension of the special grant was the only anomaly of 52 submitted to the Department of Education and Science that has been cleared up.

Mr John Randall, president of the NUS, said the announcement was disappointing. "The union had asked for £845 year. They also wanted all students to receive maintenance grants, including those not following degree courses."

"Existing discretionary powers are being used by local authorities to cut students' grants to save money. Education for these people was now over."

A 22 per cent increase is no compensation for 30 per cent inflation. A rent freeze is now needed to protect student living standards. All the increase will be needed to protect students against the rising costs of books, clothing, transport and other essentials.

"To prevent student hardship there must be no increase for next year in the rents charged by colleges and universities." In fact, Mr Prentice announced that board and lodging charges in colleges and polytechnics will go up 500.

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# Industry puts squeeze on FE colleges

Some further education colleges may have to drop linked courses with schools as a result of the demand for industrial training courses, Mr Tom Driver, general secretary of the Association of Teachers in Technical Institutions, said on Monday.

The budget allocated large sums to expand the Training Opportunities Scheme, which retrain adult workers. Because the government's Skillscentres were full, much of this expansion would be in FE colleges.

The cuts in education meant many colleges did not have room to expand. "If they are at their limit, my estimate is that they would choose TOPS courses rather than linked courses," he said.

Mr Derek Weitzel, the new ATTI president, said that some colleges had avoided going out for TOPS courses because they were scared that the money for it, some of which came from the European Economic Community, might dry up.

At the ATTI's annual conference, which opens in Scarborough today, salaries, education cuts and pensions are likely to be discussed.

£1.5m to keep courses going

The Manpower Services Commission are allocating £1.5m for training courses that are threatened with collapse because of the economic crisis. The industrial training boards will identify which courses are in danger, but the likelihood is that a high proportion of the courses will be apprenticeships.

Now for the new MSC grant will go is not clear. Mr John Cassels, chief executive of the Training Services Agency, said two people a year could be trained in a Skills Centre for £3,250. But they would be looking for the minimum amount to put in to keep courses going.

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\*Price for educational institutions only.

# Make more of manpower and training, says Pile

Britain will only survive economically if more emphasis is given to the education and training of young people, said Sir William Pile, permanent secretary in the Department of Education and Science, in London last Friday.

Opening a conference organized by the British Association for Commercial and Industrial Education, he said that we were not making full use of our manpower. Manpower was weak because too few graduates went into industry. Workers' efficiency was lessened by a lack of training.

It was a mirror of changing attitudes and motivation, as well as the curriculum. "Too many youngsters and too many employers are sceptical of the value and need for training."

He had just returned from Germany where he was "absolutely astonished" by what they were doing in vocational education. Employers, trade unions, and young people there were convinced that better education and training was the way out of economic depression.

"These are convictions we lack. And one way or another we are

going to have to supply them if we are going to survive economically."

Compulsion was probably not the answer. There might have to be some sort of incentive to increase the level of training. It was most important to show employers and young people that training paid off.

The education and training service could help by improving their courses. "The best courses will be those which consciously seek to integrate general and vocational training."

Some employers in the audience disagreed. Mr H. A. Harrington, of Lever Brothers, thought there was little demand for general, as well as vocational, day-release.

Mr J. C. Eaton, of the Royal Ordnance Factory, said that the time available for training was too short to allow room for general studies.

In reply, Sir William said no one believed that a person's training should be restricted in his present job.

He agreed it was essential that everyone was literate, able to do elementary calculations and express themselves.

## Fears over effects of Dip HE

The newly formed Technician and Business Education Councils are worried that the Diploma of Higher Education may undermine some of their planned awards. Mr Francis Hanrott, the TEC's chief officer, told the conference. With the Council for National Academic Awards, they have asked the Department of Education and Science to discuss the matter.

The TEC and BEC were set up to standardize courses in technician and business education and produce their own system of awards.

Mr Hanrott said a university in polytechnic could easily design a DHE diploma course that was the same as their proposed two-year higher

diploma course. Mr John Sellers, of the BEC, said that the overlap between the DipHE and BEC awards would be enormous. There would also be overlap between lower BEC awards and studies in schools.

The councils are also studying ways of providing for external students who cannot go to a further education college regularly. They were hoping to draw on the Open University's methods which combine correspondence courses with personal tuition.

The TEC's awards would open the way to closer links between education and training. Workers who had been retrained under the Training Opportunities Scheme would have credits towards a TEC qualification.

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# Storm in Scunthorpe sets NUT at sixes and sevens

by Sue Cameron

The National Union of Teachers have found themselves at the centre of a major political row over "empire building" headquarters in Scunthorpe.

A socialist discussion document, written by Mr John Grayson, an associate member of Scunthorpe NUT, various governors against being "used by the headmaster as an extension of his empire". The suggestion has caused a furore throughout Humberside, drawing a disapproving letter from Mr Norman St John-Suway, the Tory spokesman on education, and splitting the Scunthorpe NUT.

In the past three weeks local NUT members have started disciplinary proceedings against Mr Grayson, temporarily removed their president from his chair and sacked their vice-president. They have been told by national NUT officials that under union rules they cannot remove a vice-president from office but this week it looked as if this advice would be ignored.

Mr Grayson, who is vice-president of the Scunthorpe constituency Labour party, wrote the discussion document for a meeting of the Socialist Education Association. It calls on governors to undermine the authoritarian nature of schools, to assert greater authority over the curriculum, work for the abolition of corporal punishment and "challenge the right of teachers to take it on themselves to make very far reaching decisions which affect the education of a large number of children".

The document was sent out to Labour governors in the area and discussed by them at a subsequent meeting of the SEA. This meeting, which Mr Grayson described as private, was chaired by Mr David Knight, vice-president of Scunthorpe NUT. The discussion paper did not claim to represent NUT policy but Mr Grayson nor Mr Knight specifically stated that it was not union policy.

All would have been well if a copy of the document had not fallen into the hands of a Conservative school governor who circulated the contents to every likely empire builder in Scunthorpe. Local NUT members found it fascinating reading especially as some of them decided it could be taken to represent the policy of their supposedly nonpolitical union. After all it had been written by a union member and the debate on it had been chaired by a union vice-president.

The text of the meeting of Scunthorpe NUT was attended by 120 people instead of the usual 30 or 40. Mr Nick Tallentire, the local president, was stopped from chairing the debate on the grounds that he too had been present at the SEA debate and could not therefore act impartially. Eventually, after a heated debate in which accusations and counter accusations flew fast and furious, three motions were passed. The

first completely dissociated the NUT from the policy outlined in the document. The second censured Mr Knight for his part in the proceedings of the association. The third ordered Mr Grayson to appear before an NUT regional disciplinary committee for acting in a way that was detrimental to the union.

Mr Don Gregory, NUT regional official for Humberside, tried to restrain, pointing out that parts of the document were in line with official NUT policy. Some members also voiced anxiety about whether the association could sack the vice-president under union regulations. Officers promised to write to NUT headquarters for a ruling. In the meantime all three motions were to stand.

Scunthorpe reverberated to the now, so much so that the issue was raised in Humberside County Council.

Meanwhile this "political hot potato", as one national NUT official described it, was being discussed at Hamilton House, and this week Mr Fred Jarvis, the union's general secretary, delivered his verdict, based on legal advice.

He has written to the Scunthorpe NUT telling them there is nothing in union rules that allows for the removal of a vice-president unless he voluntarily resigns. If they persist in trying to get rid of Mr Knight he would probably be able to take legal action against them and he would almost certainly win.

But, according to Mr Terry Pinnegar, secretary of the Scunthorpe association, although there was nothing in the rules to say Mr Knight could be sacked, it seemed there was also nothing actually forbidding his sacking either.

"We are not trying to curtail anyone's freedom of speech," he said. "But we do insist that a union member who is talking about education should make it clear whether he is speaking for the NUT or not. Instead Mr Knight told the association that the SEA meeting was none of their business. As far as I am aware, the motion removing him from office still stands."

Mr Knight said he had not been connected with writing the document and, as chairman of the SEA meeting, he had been impartial. "I do not see why a private discussion document should carry a disclaimer. The whole thing has just been an excuse to purge some union members."

Mr Grayson said he wrote the document for socialists and had used socialist terms. "It was not meant to be an academic paper for politically illiterate teachers. If it had been, I would obviously have phrased it differently. I will be going before the disciplinary committee in June."

He said the whole issue was now being discussed by other NUT branches.



John Grayson: facing disciplinary proceedings.



David Knight: sacked vice-president.



Terry Pinnegar—secretary: backing the sacking.

# Eager l.e.a.s lay claim to unused allocations

by Bob Doe

Some local authorities are still waiting to take up nursery building allocations relinquished by authorities who have cut their budgets. Mr Ernest Armstrong, Under Secretary at the Department of Education and Science, told a joint conference of pre-school organisations in London last Friday. The DES would not allow this money to be used for purposes other than nursery classes in areas where there were still marked.

The conference was organized by the British Association for Early Childhood Education, the National Campaign for Nursery Education, the Pre-school Playgroups Association and the World Organization for Early Childhood Education (OAME).

Cooperation and coordination of services for the under-fives were needed. Both the DES and the Department of Health and Social Security were about to send out circulars telling local authorities how their educational and social services should work together.

Mr Armstrong warned that public resources would never be able to meet all the demand on them. But he advocated more creches and nurseries in factories. "If we want women to be free to choose between a career or remaining at home, we have got to tackle the job of adequate child care facilities. Enlightened employers could make a significant contribution here, in cooperation with associations like yours, and local authority social services departments."

Grants to playgroups would be more cost effective than the projected expansion of nursery education, said Mr Robert Hessel, director of social services for Warwickshire. Though he had hard things to say about some playgroups, "the extension of playgroups, particularly in areas of social deprivation, will almost certainly mean major changes in currents of play and administration."

"The best thing that could happen in some playgroups is that they should close," he said. But a reformed playgroup movement, with better training and more open discussion of goals, had tremendous

potential for the future. "Work with young children is the most useful social work we have," he said.

Playgroup supervisors paid a minimum of £5.00 per week. All the rest is just passing to the DES. The DES would not allow this money to be used for purposes other than nursery classes in areas where there were still marked.

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# Pay: angry dons boo Minister

Lord Crowther-Hunt told the teachers that they would have to work harder, do more teaching and less research and take bigger classes. A great deal could be saved by fractional increases in efficiency.

"If we now had a student-teacher ratio of 9:1 in the universities instead of 8.4:1, we would be saving some £12m to £13m on staffing costs," he said.

"If the ratio was 10:1 (as suggested in the 1972 White Paper for higher education generally by 1981) the saving would be about £30m. If it was 11:1, the saving would be about £45m. And if we had savings of that kind on recurrent expenditure there would be scope for some increase in capital expenditure."

Using existing buildings more efficiently could also save money. "There are now roughly 460,000 full-time students at universities, polytechnics and colleges in England and Wales. If it were possible, by, for example, tighter timetabling, to increase the effective use of the accommodation by 1 per cent, we could save about 4,500 places at a capital cost of £12.5m or more."

Over a period of years, if the figure was 2 per cent, we could save 9,000 places. If it was 5 per cent we could save 23,000 places, costing more than £60m. This would be really big money and could make a big impact elsewhere."

Basic questions about the balance between teaching and research had to be faced. "At present, something like a quarter of our expenditure on universities goes into research (including the research time of uni-

versity teachers). Nearly 19 per cent of students are doing postgraduate research.

"We all know of postgraduates who are neither contributing to the advance of worthwhile knowledge nor adding in any worthwhile way to their own qualifications.

"Does too much of our effort go into postgraduate work? Should there be a shift of emphasis to undergraduate education and teaching?"

"Just as we've got to become more efficient in industry, so we have in education. This must involve a shift in the current student-teacher ratio, for it is in this area that the enormous expense of higher education in the United Kingdom lies.

"It follows that the average amount of teaching done by a lecturer must rise and, in so far as that is feasible, one must also consider again the possibility of improving the effectiveness of that teaching.

"It may well be that universities need to reflect somewhat on traditional methods and wonder whether techniques pioneered elsewhere, notably by the Open University, may not also be relevant to them."

Lord Crowther-Hunt's final point was, perhaps the most telling. Universities and polytechnics had to work much closer together, he said.

University vice-chancellors have supported the Association of University Teachers' pay claim this week by issuing a statement rejecting the injustice of a policy which gives polytechnic teachers more money than university lecturers.

"The manifest injustice of this situation is the biggest single factor in the very considerable loss of morale which is occurring in the universities," the statement said.

The executive are to consider setting up a fighting fund. This will be financed by donations of one day's pay from each of the 27,000 members.

# Ballot nearer on TUC

Affiliation to the Trades Union Congress came a step nearer for the TUC when delegates voted to start moves to hold a ballot of members.

By the end of the year the executive will have circulated the arguments for affiliation so that the association will be ready to take a decision on affiliation.

Mr Edward Britton, former general secretary of the National Union of Teachers, told the conference of the benefits of belonging to the TUC. No political commitment was asked for, he said. "None of the 100 on the list went to the Labour Party, and the autonomy of unions was left untouched."

"Through the TUC we can get nearer to breaking down the excessive fractionalization of the teaching profession. Affiliation would help more people to realize that the problems of the universities are not esoteric but have repercussions on the life of the whole community."

"We in the teaching profession are not to think we are the repository of all knowledge and a good deal of wisdom, but we have noticed the extraordinarily high standard of debate in the TUC and union members' expertise in practical affairs."

"The employers meet together and it is important that we on the other side of the table are not divided. The teaching profession is tending to ally itself more closely with wage and salary earners. It realizes it can no longer sit back and wait for the employers to do something for them."

# How to deal with demos

A do's guide to what to do during student demonstrations was circulated at the conference. The first piece of advice was "Move your tables home".

Teachers should also take more precautions about looking out their rooms and filing cabinets. Disruptions can happen in the most governed universities, the document said. Every strike or picket was different and there was no sure-fire cure all. But it was important to keep talking to students and not to act too quickly.

Setting up links with other trade unions on the campus could defuse a potentially explosive demonstration or occupation, if it was pointed out to students that other people's working lives were being affected.

As long-term aims, the guide recommended no emergency investigation committee, who would find out within 24 hours why the disruption was taking place, and a "emergency committee, who would handle a disruption as it happened."

# Polytechnic of the South Bank

Our issue of April 18, under the heading "Polytechnic closed by tribunal", we stated that a tribunal had upheld the complaint that Mrs Allan Geach, acting head of the South Bank Polytechnic, had some cases used, undesirable and indecent language.

The report went on to say that Mrs Geach had designated staff and made abusive comments to make untruthful and sweeping accusations which had not been taken up in an administratively correct procedure. The report continued that this had been done on such a large scale as to constitute a major irritation in the faculty and make normal work relations impossible.

It has been pointed out to us that the above was not in fact the view of the tribunal which held that Mrs Geach had on occasions used undesirable and indecent language. This had on most occasions been in confidence and confidentially and such occasions would have been better handled by the management. The tribunal said they did not consider that they were a major irritant or that they made normal working relations difficult for all involved. We regret the inaccuracy and apologize for any offence given in that part of our article.

# Work harder' call

Lord Crowther-Hunt told the teachers that they would have to work harder, do more teaching and less research and take bigger classes. A great deal could be saved by fractional increases in efficiency.

"If we now had a student-teacher ratio of 9:1 in the universities instead of 8.4:1, we would be saving some £12m to £13m on staffing costs," he said.

"If the ratio was 10:1 (as suggested in the 1972 White Paper for higher education generally by 1981) the saving would be about £30m. If it was 11:1, the saving would be about £45m. And if we had savings of that kind on recurrent expenditure there would be scope for some increase in capital expenditure."

Using existing buildings more efficiently could also save money. "There are now roughly 460,000 full-time students at universities, polytechnics and colleges in England and Wales. If it were possible, by, for example, tighter timetabling, to increase the effective use of the accommodation by 1 per cent, we could save about 4,500 places at a capital cost of £12.5m or more."

Over a period of years, if the figure was 2 per cent, we could save 9,000 places. If it was 5 per cent we could save 23,000 places, costing more than £60m. This would be really big money and could make a big impact elsewhere."

# Competitors please copy

For years it has been evident that language laboratories would be more widely used if they were less complex and more reliable. Now, through the application of integrated circuit technology, the language laboratory takes a massive step forward. At last, a teacher's console simple enough to be operated by the most inexperienced. "Assistants" coupled with computer type circuitry to provide real reliability. Sales assistance and service is available throughout the U.K. and in 40 other countries.

# More money for Welsh gov

The Welsh Office have increased their grant to the Welsh Language Nursery Schools and Playgroups Association (Mudiad Ysgolion Meithrin) by £9,400 to £24,400 in 1975-76. More than 200 groups are associated with MMYA and the grant can only be used for headquarters administration.

# London wins chess championship

Charles St John, captain of the winning team from Lambeth, receives the B. H. Wood Trophy for the National Chess Championships of the English Schools' Chess Association, held at the Denford School, Wiltshire, last weekend.

More than 400 children, representing 22 associations took part. Lambeth did not have an easy victory: Birmingham won the first round by three points and Liverpool won the second round. The final results were London 78 points, Nottingham 76 and Liverpool 75. Neale Walford, Nottingham's captain, accepted the runners-up trophy from his team.

# Pay: angry dons boo Minister

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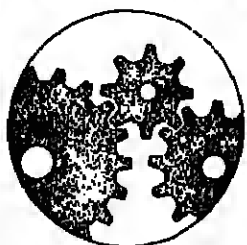
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# COURSES

## The Open University WHY NOT TEACH TECHNOLOGY?



Many schools want to teach technology but traditional teacher training has not prepared many teachers for this.

The Open University's home-study course TECHNOLOGY FOR TEACHERS has been designed to aid practising teachers in communicating to their pupils a basic understanding of technology and its influence on society. It con-

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To:—The Post-experience Student Office,  
The Open University, P.O. Box 76,  
Milton Keynes, MK7 6AN.

Please send me Prospectus and Application Form for 1976  
home-study Post-experience course.  
Name (Mr., Mrs., Miss, Ms.)

Address

(Please use block capitals)

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Enquiries should be addressed to the Secretary, School of Education, Central College, Bailrigg, Lancaster, LA1 4YL.

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Full details from  
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Nearly 100 Tudor and Jacobean portraits from the National Portrait Gallery are now on permanent view at Montacute House, Somerset, as a result of cooperation between the gallery and the National Trust, owners of Montacute.

The portraits have been brought out from the obscurity of the gallery's storerooms to be seen in the sort of setting for which they were intended, and Montacute, where the long gallery and adjoin-

ing rooms have been rescued from decay, has on display portraits of notable personalities of the period covering the early days of this great Elizabethan house.

It is hoped that this venture with surplus stocks from the gallery will be followed by similar operations involving other periods and other houses in other parts of the country.

The display at Montacute should prove particularly attractive to schools for the way in which it brings house and history together.

The National Portrait Gallery education officer is organising special guided visits for school and college groups (who should already be familiar with the gallery). These visits, between July 1 and 11, must be booked in advance by telephoning the Education Department, National Portrait Gallery, Martin's Place, London WC2E 9EF. Tel. 01-930 8511, ext 53.

● Above—left: James I (attributed to R. Lockey); right: Sir Eustace Drake (artist unknown).

## 80 groups in campaign for educational TV channel

While the Annan Committee consider, among other things, the best use to which a fourth television channel could be put, about 80 groups and associations have joined together to campaign for a national education channel. Last Saturday they held their inaugural meeting and elected Mrs Mary Dalton, president of the Open University Students Association, as chairman.

The OUSA called the meeting as they feel they have a special case to make. With more OU courses being pushed into early morning and late evening slots, Mrs Dalton said: "It's just not on to concentrate on a complicated psychology test at 6.40 in the morning, because you're still half asleep."

The association have given evidence to Annan but they do not want the new channel to be exclusively for the Open University. They believe there is considerable potential for television education, from pre-school to university level, including non-academic interests and hobbies.

Such a channel would be "the envy of the world", according to Mr Allister Wilson, director of Humberside ETV. Television was a most potent medium for instruction.

Commercial in the middle of programmes would have to be banned, but a compromise with the IBA would be better than higher fees for those who watched the new channel.

No new licence could be found for general entertainment programmes. "In New York there are 13 channels of general entertainment. I watched a viewer there turn on the television, without even consulting the programme guide. He just flicked through from channel to channel and by remote control as well. This is a terrible cheapening of the medium."

The strength of the existing channels as mass media was also their drawback. The IBA had to woo viewers to gain the biggest audience for advertising revenue and the BBC had chosen to compete with them on audience ratings.

Mr Wilson said the great difficulty was how to finance the new channel. The BBC could not afford it at the moment. "The IBA could afford to, however, and they have the studio space and staff."

Commercial in the middle of programmes would have to be banned, but a compromise with the IBA would be better than higher fees for those who watched the new channel.

## How to conduct a campaign

Rational argument and the usual channels are a waste of time for parents looking for a better education for their children according to the Registrar of Parent Campaigns. Published this week by What's? the parents' magazine of the Advisory Centre for Education, Cambridge, the register pools experiences from 52 campaigns by parents in England and Wales.

The usefulness of good information and statistics is the asset most commonly mentioned by these groups. One of the most successful tactics was for parents to call the fire authorities into an overcrowded school. For a Reigate school this resulted in immediate delivery of extra temporary buildings.

Most effective tactics include lobbying MPs, arranging for thousands of letters to be sent to decision

makers, keeping children from school, working through councillors rather than local education authority officials or working through officials rather than councillors. Least effective tactics include lobbying MPs, political divisions, campaign groups, trusting the school psychological service or believing the L.E.A. Some groups found the term "action group" alienated would-be supporters.

A Norfolk group claim to have achieved their "pro-comprehensive school" and the Winchester Association for the Advancement of Education describe their achievements as "informing ourselves" and their best tactics as "keeping good relations with the L.E.A."

The Where Register of Parent Campaigns from ACE, 32 Trumpington Street, Cambridge, CB2 10Y, costs £5.

## Agency would find homes for offenders

A central allocation agency to coordinate accommodation for young offenders should be set up, so there are no places in communities in their own areas, towns or cities.

In a book published last week, Mr John Watson, former chief clerk of the Home Office, and Mrs Patricia Watson, chief clerk, recommend there should be more security in community homes.

An allocation agency would be set up to coordinate accommodation for young offenders. The agency would be set up as an independent body, not a part of the Home Office, and would be responsible for the day-to-day running of the system.

The authors also recommend that the Home Office should set up a central agency to coordinate accommodation for young offenders. The agency would be set up as an independent body, not a part of the Home Office, and would be responsible for the day-to-day running of the system.

Supervision orders should be strengthened by giving supervising officers more power. If a juvenile is more powerful, it is more likely that the supervising officer will be able to enforce the order.

Local police should be given more power to enforce supervision orders. The authors recommend that the Home Office should set up a central agency to coordinate accommodation for young offenders. The agency would be set up as an independent body, not a part of the Home Office, and would be responsible for the day-to-day running of the system.

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## Patience and skill trap new particle

### Science diary

by

John Maddox

At the risk of becoming a bore about the excitement of the physicists at the discovery of new particles of matter, I now report the discovery of yet another particle by two physicists at the State University of New York, Buffalo.

The people concerned are P. L. Jain and B. Girard, and they report their discovery in *Physical Review Letters* (May 12). It is an exceedingly elegant piece of work and certain to point the way to the discovery of the other new particles whose existence has been on the cards ever since the announcement last November of the discovery of the first of the two psi particles at Stanford and Brookhaven in the United States.

It is worth remembering, of course, that last November's discovery of the first two psi particles was largely circumstantial. At Stanford, for example, the first sign that something odd was happening was the recognition that positive and negative electrons colliding with each other were more likely to interact, producing other particles of matter, when their combined energy amounted to the equivalent of 3,100 million volts than when it was slightly different from that. Later, it became apparent that the disintegration of the psi particle could often be recognised by the appearance of a pair of mu-mesons.

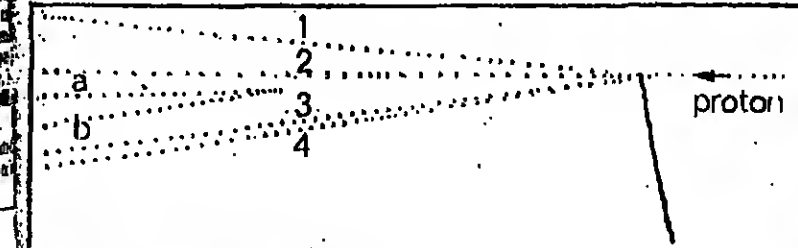
But since the psi particle itself, like the heavier version, whose mass corresponds to an energy of

course, new, and is indeed the technique by means of which the late C. F. Powell unravelled the properties of mesons in cosmic rays nearly 30 years ago.

With patience and skill it is possible to measure tracks which are no longer than a few thousandths of a millimetre, so that there is a chance that the existence of exceedingly short-lived particles can be confirmed directly.

Jain and Girard have won a rich harvest from their first attempt. The accompanying diagram is a tracing of one set of tracks they have found.

A proton enters the picture from the right and collides with a muon nucleus at the point from which the heavy track of a nuclear fragment moves off more or less at right-angles. The tracks labelled 1,



Tracks found by Jain and Girard

3,800 million volts, carries no electric charge, there is no hope of observing it directly by means of the usual instruments for recognising particles of matter. Another snag is that these particles are so unstable that they do not travel very far before disintegrating.

Thus the lighter psi particle has a lifetime of the order of a millionth of a microsecond, so that even if it is travelling with the speed of light, on the average it will only travel for a tenth of a millimetre before disintegrating.

It is this last difficulty that has driven Jain and Girard to think of using photographic emulsions for detecting these unstable particles. What they have done is to expose a beam of photographic emulsions to the beam of particles from the Fermilab accelerator near Chicago, and to look for the tracks of particles which become apparent in the photographic grains of the emulsion when this is developed. (The use of photographic emulsions for the detection of particles is not, of

2, 3, 4 and 5 are caused by the nuclear particles produced in the interaction of the proton with the muon nucleus, and are no surprise.

But the V-shaped track which forms just under a fifth of a millimetre downstream from the nuclear collision is more interesting. One of the tracks, labelled "n", is that of a particle with very high energy, thought to be something like a pi-meson or a proton, but track "b" is caused by an electron.

And the inference is that the gap between the nuclear interaction and the apex of the V-shaped track is spanned by a nuclear particle which has no electric charge. By adding up the energies of the tracks "a" and "b", it is possible to infer the energy of this novel particle, and thus its mass (from Einstein's equation  $E=mc^2$ ). The result is that the mass turns out at the equivalent of 1,250 million volts or thereabouts, from which it follows that the particle concerned is new.

## Coal still in question

While the argument about British membership of the Common Market continues at a gentlemanly pace, British nationalised industries seem to be taking full advantage of the Community's rules on industrial development.

The National Coal Board has been doing especially well out of the arrangements with the European Coal and Steel Community that allow the coal industries in member nations to borrow money at very low rates (now roughly 9 per cent and less, since the beginning of 1973, dropped to a low of 5.75 per cent). On top of that, it has also collected a total of £17.5m to be used for research and development.

All this is perfectly fair, of course, although yet another reminder that the negotiatory of British withdrawal from the EEC will be not merely difficult, but expensive.

What worries me about the Community's most recent loan of £17.5m to the National Coal Board, however, is that it is being used for research and development.

## Oil slick spreads to backwaters

In April, it will be recalled, the meeting of oil consumers and oil producers called by the French President to prepare for a full-scale international conference on oil broke up in failure after two weeks of wrangling in Paris. Scenarios like me (TES, April 18) were not surprised, believing that the price of oil cannot be determined by international conferences, however august, but only by the operation of market forces.

But the wrangling at Paris in April never got that far. Developing countries, led by Algeria, insisted that if there were to be an international conference on oil, it should also consider the prices of other raw materials and, in more general terms, what the developing countries have been saying for several months should be "the new world economic order".

In the event, the Americans said they would talk about oil and nothing else, with the result that the delegates to the preparatory meeting in Paris went home expecting that the international conference they and France had hoped for would never come to pass. By all accounts, the chief oil producers were unwilling to themselves that the price of oil would be increased again in September when the period of the present freeze comes to an end. These are the reasons why Dr

Henry Kissinger's announcement last week that the United States is indeed prepared to take part in an international conference about the prices of raw materials of all kinds was startling to a degree not yet recognized by the newspapers. The intention is that the issue will be discussed with other industrialized nations in the next few weeks, and that the preparatory meeting abandoned in Paris should then be convened all over again.

The fine print shows that the United States has not accepted the view of the developing countries—or at least those rich in raw materials—that there must be a comprehensive discussion of all raw materials, but simply that different raw materials should be considered "case by case". What seems to have happened is that the United States has recognised that it has little to lose by abandoning its show of intransigence in Paris and everything to gain by an international conference in which it will be possible to demonstrate that the "new economic order" is a mirage that should not divert the developing countries from their true interests.

The issue in this, developing countries supplying materials such as copper, bauxite or even coffee are understandably asking for some assurance that their income from such materials, frequently their chief source of foreign exchange, should be guaranteed against the

fluctuations of price that follow on fluctuations of demand in industrialized countries and also protected against inflation.

And recognizing the success with which OPEC has protected the incomes of the oil producers in the past few years, other developing countries have in mind a general increase of the prices paid for all kinds of raw materials.

The reasoning is, however, fallacious. If the price of copper increases, people are persuaded to use aluminium instead. If the price of bauxite is increased, the industrialized world concentrates on the extraction of aluminium from other ores. In other words, there is a danger that too formal an agreement on higher prices for raw materials might rob the developing world of income that it needs.

So the developing countries would be better advised to fight for the objectives that have sustained them for the past several years—the relaxation of tariffs and quotas, restrictions on the import of industrialized countries of goods manufactured in the developing world. It is a scandal that countries like ours have for so long denied the developing world a chance to earn its own living by means of exports.

And it is depressing that the current recession is unlikely to persuade the British Government to liberalize the import trade in textiles, for example.

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What kind of opportunities? The fast-promotion kind. The right person could be an Inspector in their late twenties and a Chief Inspector a few years later.

A young PC has one of the most

interesting and worthwhile jobs going today, and gets well looked after in the areas of pay, housing and pension.

There are three methods of entry into the police service. As a cadet, between 16 and 18; as a police constable, from 18½; and through the Graduate Entry Scheme.

Graduates accepted under this scheme will know before they actually join whether they are considered suitable for a special accelerated promotion course at Bramshill Police College.

For more information about life and career prospects in the police, please write to: Police Careers Officer, Home Office (Dept. A72), London SW1A 2AP.

Name

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County

If you would like to discuss a police career with a member of the police service please tick here. ☐



# COURSES

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Those accepted on this course are normally seconded from their schools on full salary.

APPLICATIONS should be sent as soon as possible to  
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## CAMBRIDGE INSTITUTE OF EDUCATION Courses and Conferences September 1975

**A Concept Learning Approach to the Teaching of Social Studies**  
A workshop course to be held at Wollaton Court, Giltton College, Cambridge from 25-27 September 1975 for teachers of Social Studies in Middle and Secondary Schools.

**Dance and Gymnastics in the Middle Years of Schooling**  
A course of practical sessions in dance and gymnastics, talks, discussion and workshop sessions, to be held at Bedford College of Physical Education from 12-14 September 1975.

**The Arts Curriculum Project**  
A follow-up conference to the Schools Council's Curriculum Study: The Arts and the Adolescent, directed by Malcolm Ross, which will take place at Salford Walden College from 12-14 September 1975.

Further details about these courses are available from the Course Officer, Cambridge Institute of Education, Shaftesbury Road, Cambridge CB2 2BX. Telephone Cambridge (0223) 69831.

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Courses will be offered in the following areas:  
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Please apply, stating the subjects in which you are interested, to:  
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## Morocco

## Inflation hits development plans

from John Gretton

**RABAT** Mohammed Bouamoud, Minister of Primary and Secondary Education, last week presented a confidential report to the government. Things being what they are here, to all intents and purposes that means the King, Hassan II.

The report, *L'Enseignement au Maroc: bilan, diplômes, perspectives*, summarizes achievements so far, and outlines plans up to and beyond the end of the present Five Year Plan in 1977.

In an exclusive interview, the minister told me: "Considering the means at our disposal, I am not satisfied"—this despite the fact that the illiteracy rate in Morocco is still around two-thirds of the total population; and in the past two years, 1,000 primary school classes have been closed down because of the drift of this population towards the towns.

For the minister, the most important task is to replace the 6,000 French cooperative teachers by Moroccan teachers. In particular, M. Bouamoud expects that, one year after the end of the present Five Year Plan, in 1978, all the 4,000 teaching posts in the first four years of secondary school at present held by Frenchmen will have been Moroccanized.

To this end, the government is pressing ahead with the opening of 13 regional teacher colleges in the autumn. These will be in temporary accommodation, as the new buildings which will be financed by the World Bank, have not yet been put up. With the help of these colleges, the total number of trained Moroccan teachers should rise by 11,466 between now and 1978.

Since the closure of the technical schools after the 1965 riots, there is practically no technical education available for Moroccan students who are not able to make it to the baccalauréat—apart from low-level apprenticeship-type courses. Though Morocco suffers greatly from the lack of such medium-level skills, there are no plans at present to remedy this situation.

Similarly, M. Bouamoud clearly felt that by himself he was able to do very little about the high drop-out rate in Morocco, both from primary and secondary schools. In the countryside, where 80 per cent of the population still lives, he is in the need for regional economic centres, both to keep the population there, and to give them an incentive for schooling. There were no signs, however, that that sort of involvement was being considered by the government.

In fact, although M. Bouamoud insisted that all his programmes remained intact, despite the dramatic cost-cutting measures necessitated by inflation, money for investment of all sorts is an increasing problem.

A large proportion of the profits from phosphate—Morocco is the biggest exporter in the world—are going to the *casse de compensation*, which is used to subsidize the cost of sugar, cooking oil and other essential foods.

There is little likelihood of investment in education, which M. Bouamoud insisted time and again, were the key linked problems of Morocco today.

## Holland

## Guidance services to be boosted

from Lynn George

**AMSTERDAM** Dr. Jos van Kempen, Education Minister, is planning to expand and reorganize school guidance services. At the moment there are 1,000 such services, employing 1,000 psychologists, social workers, remedial teachers and careers advisers.

To run the services costs, to be increased from 200 million to 220 million a year, the government intends to round up 20 per cent of the total population, and the remainder comes from joint efforts. This year, the government gave 24.5m and in 1978 this is due to rise to 28.5m.

## West Germany

## Unions step up fight for shorter working week

by David Dungworth

The economic difficulties confronting the federal states, which largely control education, have caused the perennial squabble over teachers' working hours to flare up anew again.

Pressure in hold back the inevitable rise in educational expenditure has not only limited the number of places available to new entrants to the profession (TES, May 16) but has also led to a move to increase the teaching loads of those already working.

The required number of teaching hours is laid down by each state ministry of education and varies both according to the *Länder* concerned and the type of school. At present, the weekly average ranges from 28 hours for teachers in primary schools to 23 for grammar school staff.



Union leader Frister: variety of protests.

Top officials in the *Länder* education ministries are now proposing to establish a uniform pattern for the whole country under which staff at primary level (years one to four) would teach for 25 hours a week, those at secondary level (years five to 10) for 27 hours and those at tertiary level (years 11 to 14) for 25 hours.

On the face of it, teachers will continue to enjoy a much shorter week than the 40 hours worked by some employees in other professions. Moreover, their teaching hours are normally confined to the period 8.30 am to 1.30 pm, leaving their afternoons free for other activities. Many, it is claimed, use this time for private clubbing at rates currently reaching DM40 (about £7.50) an hour, little of which is declared for income tax purposes.

## Outlook bleak for 'think-tank'

Although a final decision has yet to be taken, it now seems virtually certain that West Germany's educational think-tank, the Educational Council (*Bildungsrat*), will be wound up when its second five-year period comes to an end on July 14 (TES, April 18).

Baden Württemberg and Bavaria had refused to renew the agreement continuing the council because they considered some of its more recent proposals to be far too radical.

They were particularly opposed to its support for comprehensive schools and its views on pupil participation in school government.

They had therefore advocated that its functions should be taken over by *ad hoc* committees of experts which would be appointed

They get 13 weeks a year, compared with 10 weeks, and though many on Saturday mornings, the week is being progressively reduced.

Teachers' representatives, such as the *Verband der Lehrkräfte*, now a class of up to 10, involves much greater stress than dealing with documents in an office. And the teaching hours are not limited to the classroom, as many more hours are spent in preparing lessons and marking papers, and in staff and parent meetings.

In fact, work longer hours are often professional, as in the case of the Knight-Wegmann in Switzerland, who in December 1973, when he became the minister of education, gave a 40-hour week, the study showed, allowing for their own work, a week average of 40 hours.

The teacher's union, therefore, has excluded teachers from a week introduced for public service employees, except teachers, as an additional part of the profession.

Led by the *Generalbund der Deutschen Lehrerinnen und Lehrer*, the teachers' organizations are conducting a campaign against the proposal.

The conference of *Länder* education ministers has been in favour of a new bus plan in changes in working hours, only after consultation with the unions, but the *Länder* ministers in their proposals. At a meeting in Bonn, the *Länder* ministers agreed to a new proposal, which would reduce the hours and extend the 40-hour week to ensure that teachers in the new year would be no more than "a variety of measures".

## France

## Reform Bill gets qualified go-ahead

from William Farr

**PARIS** The government's blank cheque to carry through controversial measures. Among the many features of the proposed legislation which have disappeared is the plan to introduce compulsory schooling at the age of five instead of six. Nor will children be allowed to jump classes. The principle that pupils should move up according to their maturity and not according to age has thus been abandoned. Backward children will still be required to repeat classes—a system which M. Haby has often said should be avoided.

The real changes concern the organization of secondary education. At the first level, from 12 plus to the school leaving age at 16, all children will attend the same type of secondary education college (CES). They will all study the same basic subjects. In the last two years children will be able to attend some pre-professional or pre-apprenticeship classes while still continuing to follow the basic common courses.

Those who stay on after 16 will be able to go to one of two types of lycée. At the general and technological lycée they will spend two to three years working for the *baccalauréat* (and possible access to the universities). At the professional lycée students will spend two years to obtain a certificate of professional

competence. The short 18-article Bill is drafted in very broad general terms likely to be acceptable to all. It falls far short, however, of the major reform originally envisaged by M. Haby.

In general is the Bill, on the other hand, that it gives M. Haby the means to effect concrete changes by administrative decree. This strategy is likely to be challenged by those who were against the original Haby proposals. The powerful National Union of Primary School Teachers, for example, has said that the Bill would simply give

United States

## Court confirms major bussing plan for Boston

from Frances Hill

**NEW YORK** Judge Arthur Garrity of the Federal District Court has ruled in favour of a new bussing plan in Boston to end school segregation. The new plan is on a wider scale than the one introduced in 1974, which caused a year of riots and violence. Judge Garrity has also ruled that two Boston high schools must be temporarily closed to prevent further racial clashes.

Under the new plan, 21,000 children will be bused to schools outside their home neighbourhoods. Many of them will be younger than the pupils bused under the old plan. Pupils will be bused throughout the city, except in the heavily Italian East Boston area, which is isolated from the rest of the city.

The plan has met with strong opposition from groups opposed to bussing, including Boston's School Committee. Last June Judge Garrity ruled that the committee had illegally operated a segregated school system. School committee members believe that the new plan will bring continued violence.

Meanwhile, the Supreme Court has declined to review Judge Garrity's 1972 ruling that Boston's school system is unconstitutionally

## 'Magnets' aim for integration

Forty-three Houston secondary schools are to be developed as "magnet" schools as a means of promoting school integration. A "magnet" school is one that offers special courses, not available in ordinary secondary school programmes, likely to attract pupils from all racial and ethnic backgrounds.

Among the schools requesting magnet programmes first priority will be given to one-race schools. All schools chosen as magnets will have available space for students of the opposite race.

Pupils in Houston are normally bused to attend schools within their attendance zones, but the plan will not apply to pupils chosen to attend magnet schools. No student qualified for a particular magnet school will be denied admission unless the racial goals for the programme have been met. The school will not accept more than 10 per cent of the ethnic group to which the pupil belongs below the racial goal. The school will not accept more than 10 per cent of the ethnic group to which the pupil belongs below the racial goal. The school will not accept more than 10 per cent of the ethnic group to which the pupil belongs below the racial goal.

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knowledge and aptitude for one or a group of trades. The certificate could also give access to higher level studies at university or university institute of technology.

Most surprising in the new Bill is the omission of any reference to the baccalauréat and its relation to university entry and to the recruitment and training of teachers.

Both questions have been the subject of passionate controversy for years and were dealt with in the original proposals. They are certainly of as much importance as the participation of parents in the school community—in which four articles of the Bill are devoted.

However, the *baccalauréat* and teacher training also come under the auspices of M. Jean-Pierre Solon, Secretary of State for Universities, and it may be that he will be making separate announcements concerning them.

No matter how quickly the Bill is passed the first steps in implementing it cannot be taken until the beginning of the academic year 1977. This means that no pupils who are today in the last two years of the first cycle or in the second cycle of secondary education will be affected by it. If new arrangements are made for the *baccalauréat* they will only come into effect in June, 1980.

Australia

## Migrants get Canberra aid

from John Kirkaldy

**SYDNEY**

The government has announced 37 grants worth A\$288,202 (£164,686), mainly to assist migrant school children in Australia.

Each state has received its share from this government fund-out but Victoria has received the highest total of grants (20) because of its high migrant population. The largest grant is A\$145,488 for an educational complex in the Melbourne suburb of Richmond which is sponsored by the Australian Schools Commission.

The Richmond project combines 10 government and six Catholic schools to provide specialized English services, interpreting facilities and an increased adult education programme.

Another large grant of A\$27,340 went to the Greek Education Committee of Victoria to set up a year-long investigation into the special needs and problems of Greek children.

Although these and similar grants are welcome, the problem of migrant children in Australia remains. Between 1950 and 1972 the population of the country rose from eight to 13 million and immigration accounted for about 40 per cent of this increase. Only about half of these immigrants came from the traditional source of Britain.

South Africa

## 'Free for all' is target

from Louis Hotz

**JOHANNESBURG** Free, compulsory education for all Black children remains the government's ultimate aim, according to the Ministry of Bantu Education.

There are now some 3,600,000 African children at school, about 20 per cent of the total African population. Another 1.5m would be added if free, compulsory education were introduced.

About 57,000 more teachers would be required and the additional cost would be A\$1,194 million (£130m) for buildings.

# COURSES

## Bishop Lonsdale College, Derby COURSES IN MATHEMATICS

Mathematics in Primary and Middle Schools (5-13 years)—Autumn Term 1975

The course will cover the development of mathematical ideas from the early beginnings to the widely ranging interests and levels of understanding which are met at the Middle School stage, integrating the best of modern and traditional mathematical methods and materials. It will be of particular value to primary teachers who have the requisite residential qualifications; to those returning to teaching after a spell away from the classroom; to teachers transferring to Primary and Middle Schools.

The course runs from Monday, 22nd September, 1975, to 12th December, 1975. This course will also be available in Summer 1976, 26th April to 9th July, and Autumn 1976, 20th September to 10th December.

**Post-Graduate Certificate in Education**

Applications are invited from graduates in Mathematics or allied subjects for a one-year course leading to the Post-graduate Certificate in Education of the University of Nottingham. Graduates will be prepared as specialist teachers of MATHEMATICS in Middle and Secondary Schools, and special attention is given to the development of COMPUTER EDUCATION in schools.

**Retraining Courses**

Applications are invited from graduates or from others with good qualifications who have had experience in industry or commerce, and who wish to change careers, for one-year courses leading to either the Post-graduate Certificate in Education or to the Teacher's Certificate of the University of Nottingham. Students will be prepared as specialist teachers of MATHEMATICS in Middle and Secondary Schools, with special reference to the development of COMPUTER EDUCATION.

Both these courses are from September, 1975, to June, 1976. Both will also be available in the following session, from September, 1976, to June, 1977.

Applications for all these courses can be accepted immediately. Further particulars may be obtained from the Registrar, Bishop Lonsdale College, Mickleton, Derby NE3 5GX (Telephone 51911), to whom applications should be submitted.

## THE COLLEGE OF RIPON AND YORK ST. JOHN North Yorkshire

### NURSERY EDUCATION

ONE TERM COURSE—25TH SEPTEMBER—12TH DECEMBER

The Department of Education and Science has approved this course which is designed for qualified teachers who wish to work with children in Nursery School classes or units. It will comprise:

- a study of the growth and development of children from 2-6 years of age;
- a consideration of children with special needs;
- provision and practice in nursery teaching;
- an examination of the role of the teacher of young children.

There are good opportunities for observation and participation in the College Nursery School and other local schools. Tutorial help will be given through discussion seminars and assignments in a chosen area of study. Details of the course and forms of application can be obtained from—

THE PRINCIPAL

The College, Ripon, North Yorkshire HG4 2QX

## ALSAGER SUMMER SCHOOL 1975

14th-18th July

Places are still available on the following Courses:—

- READING DEVELOPMENT I
- READING DEVELOPMENT II (Advanced)
- COUNSELLING AND GUIDANCE
- PLASTICS IN DESIGN EDUCATION
- EARLY YEARS AT SCHOOL
- DECISION MAKING IN THE PRIMARY SCHOOL
- MIDDLE MANAGEMENT IN THE SECONDARY SCHOOL

Brochures and enrolment forms available from: The Summer School Secretary, Crews and Alsager College of Higher Education, Alsager ST7 2HL, Cheshire.











# Dividends of change

Concluding the story of Countesthorpe College,  
Virginia Makins looks at the results of Britain's most wholehearted experiment  
in state secondary education

It would be absurd to pretend that Countesthorpe (see article last week) is working under typical conditions. The staff were chosen at the beginning in work in new ways and were committed to the ideas behind the school. The population in the catchment area has declined dramatically, and a school that was planned for 1,440 students will, next year, be used by 980 (780) upper school students and the equivalent of 200 full places taken up by high school students using specialist facilities).

The buildings were especially designed for flexibility, so it has been fairly easy to rearrange the organization of the school and introduce an advanced form of team teaching.

But that is not to say that Countesthorpe is irrelevant to ordinary secondary schools. It is easy to forget that the things Countesthorpe is best known for—the democratic system of management and informal staff-student relations, based on avoidance of authoritarian sanctions—were not designed as ends in themselves, but as means to a system where children learnt more and became more autonomous.

After five years they have succeeded in establishing the means. Open and democratic management works, without taking up too much time and energy. Staff-student relations (and, just as important, staff-staff relations) are as good as could be hoped for, and both staff and students seem convinced that the place is working along the right lines.

They have invented a framework for curriculum which may still need a lot of development, but which makes it possible to explore fundamental questions about how older teenagers learn and how the traditional subject disciplines that teachers were brought up in can be fitted to different styles of learning.

It still remains an open question whether Countesthorpe will go much further in working out those large questions. Now the school is working calmly and comfortably, it would be easy to relax, and concentrate on improving the system in terms of conventional measures—exam standards, the variety of options on offer—rather than in terms of the fundamental issues that have always been a part of the debates that have raged at Countesthorpe: how do you assess standards of learning, do the options offer really come from the needs of the pupils?

Michael Armstrong once wrote: "We half suspect that we are being urged (not consciously) to pay more attention to the appearance of learning and less to the reality." It is still possible that they will end up doing just that. But the debate, if no longer raging, is still very much there.

The thing that has got the school working calmly is the team system. Countesthorpe takes 14-year-olds from two high schools, one of the same campus which began its life in the same buildings and with the same attitudes, and one more traditional, feeding in children from a city estate in Leicester who have failed the 11-plus.

When they arrive they go into teams which are together through the fourth and fifth years (the sixth form have their own system). The staff are divided into teams, too. Each team has a head teacher, but the teams were very small, with four or five teachers and some students. The year before they had seven teachers and some 170 students. If they would argue, was too big in the first year.

The teams are further divided into tutor groups. Tutors organize the core curriculum: their groups—English, maths and social studies—within the team, and team time takes up half the timetable. There are a variety of options, covering all other curriculum areas, including PE and outdoor activities, for the rest of the time. Students arrange individual timetables with the guidance of their tutors; if they cannot be persuaded to do so, on the many options they stay in the team area, and the team tutors do their best to find some work that will interest them.

The result is that the team teachers get to know their students very well, both as people and as learners, in a way that a system of specialist teachers backed by pastoral staff makes almost impossible. Students



Many students start music with pop: Malcolm Nichols (on bass) takes them on from there. Picture by Peter Boyce

are given a stable and encouraging base, and almost all of them respond. "Our students are all very amiable now and some weren't in the least amiable when they came", said a tutor in a fifth-year team.

Amiability is an important quality, and it may be one of the things that has saved Countesthorpe from the sort of RSLA trouble some other schools have faced. But the final test of the system is the work.

So far as the core subjects go, English and social studies are generally agreed to be going fairly well and maths not well enough. In theory, and sometimes in practice, the mathematics in the team know the students well enough to gear the content to suit them—long division for those who like it and feel that is what they need, matrices for others. But it isn't easy teaching mixed-ability groups and trying to get some students through an SMP O level.

Some sixth-formers I talked to, now working to upgrade their maths because they wanted to go into retailing or accountancy, reckoned the trouble is that for maths you need "small groups and blackboard-style teaching". One team is now planning to run maths in much smaller groups, giving students less time but more attention and getting non-mathematical teachers to back up by doing maths with their tutor groups.

It is in English and social studies, and the indistinct boundaries between these subjects and some options, that the system comes to life. But before describing the work it is worth getting the examination record straight.

Countesthorpe started with the determination to give students the examinations at

16-plus they needed—but no more. They did not want to divert resources to a multiplication of O level options. (CSEs, particularly Mode 3, were easier to accommodate.)

So they offered sciences, languages and mathematics, but cut down to one English language and one social studies O level. The English folders include work from all kinds of subjects—chemistry, biology, individual interest like ornithology. A lot of the more conventional English, stories and poems, clearly reflect the first-hand experience students get by doing a lot of work out of school, in hospitals and day nurseries and primary schools as well as on work experience.

The social studies folders cover a wide range of topics—local history, local annual history, hindness, sleep and dreams. They show evidence of first-hand research and original thinking (very original in some cases—his boy writing on blindness blind folded himself for a whole day at home on weekend to see what it was like). It was clear that students had been led to draw conclusions and defend them. An external examiner commented: "Very few schools are doing this kind of interdisciplinary work studies with mixed ability groups. What they do, the results are usually excellent, and Countesthorpe is no exception."

What is exceptional at Countesthorpe is the freedom students have to concentrate on one project, or to take a far greater amount of work than a normal timetable would allow. A few bright students are getting through an enormous amount of work, and the rest of the team are doing well. Some students who could in no conventional way be called bright are doing impressively well in one field that interests them. (I met a boy who had spent hours writing a piece on his CSE English folder and was reading it to his class.)

At the other end of the scale, students who come in hostile to the idea of school work have been lured, by first being allowed to do very little, also to concentrate on one thing that catches their interest. All this work is done in a very relaxed atmosphere. The teaching and thinking is a conversational form. There are a lot of jokes. A few people are doing well in office particular at any given time at things which interest them. And some students feel in the team. And some students feel in the team. And some students feel in the team.

"I was lazy last year", said a sixth-former who has been trying to catch up on his work for a career in retailing. His tutor said he had indeed been lazy. In his opinion, he had a great deal of work to do. But he had done a great deal of work. But he had done a great deal of work. But he had done a great deal of work.

A surprising result of the team system is that the specialist departments are still strong. The school has a reputation for its English, maths and social studies, and the team teachers are very good at what they do. The school has a reputation for its English, maths and social studies, and the team teachers are very good at what they do.

Most of the teaching in the team goes on with individuals and small groups. The school has a reputation for its English, maths and social studies, and the team teachers are very good at what they do. The school has a reputation for its English, maths and social studies, and the team teachers are very good at what they do.

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fifth 11-plus failures from the city system got three or more O levels. The 1974 figures for the fully comprehensive county upper schools was 30.06 per cent. In the city schools (dealing with the usual urban problems) 25.50 per cent got three or more O levels.

Fifty-five of Countesthorpe's first-year farmers stayed on for two years; the last summer. Forty-seven of them got up to three A levels and 12 went in subjects of education. Last year 26 per cent of students stayed on into the sixth form; 31 per cent are expected to.

The ones who have gone into higher education are satisfied with the school. They say they find it easier than their contemporaries to study on their own, and they feel more broadly educated. "I seem to know as much science as the first year scientists", said a science student told me.

So it would certainly be wrong to say that Countesthorpe had "abandoned academic goals". What they have tried, and not too successfully, is to abandon academic paper classes, and combine academic with other goals.

The English and social studies work is a bit too easy, students like to stay with their friends, and the tutors they know well. But it may also be that in a conventional system, shuffling from teacher to teacher, they would simply turn off.

Other team tutors with musical or artistic or craft inclinations are beginning to go out to specialist areas. They work with groups from the team, leaning on the advice of the specialists but better able to keep their students interested, or, if necessary, continue on because of specialist relationships. When they go regularly, they can take responsibility for supervising the specialist areas while the specialists spend time in the team.

All these initiatives may fizzle out in the face of practical difficulties, not least that of teachers being in two places at once. But the dividends could be enormous—as the limited experience of some of the teachers in teams already shows.

It seems that when relationships with students get really open, teachers can be forced to rethink their subjects. However, spiritually they present the concepts they think important to their subject and relate their teaching to students' individual interests, their pupils may simply reject the concepts.

Michael Armstrong gives an example: trying to teach sociological concepts of social class. "The children just won't accept what sociologists take for granted. They give endless counter examples, and the whole accepted notion of social class explodes. The more you try to defend it, the more difficult you get into."

It is finding it more useful to think of education as an attempt to present disciplines and concepts to students in more or less acceptable ways (as it were, the Bruner approach) but as "a coming together of teacher, pupil and text in a dynamic relationship through which subject matter is reconstructed for both teacher and pupil in the light of their common or collective experiences."

The teacher's knowledge of traditional disciplines is crucial in transforming it to the child's knowledge, gained from his immediate experience. But the child's experience and intuition are just as important to the teacher. (See two articles in *Forum for the Discussion of New Trends in Education*, Spring 1975, where Michael Armstrong explains his position and gives a long example based on Countesthorpe students' work in a primary school.)

Another teacher, Lesley King, agrees that the Countesthorpe way of specifying has changed her views. "Not about trivial things, like pop music, but fundamental things like mental health. One student did a long story working in a mental hospital. We read this together, my views changed; we seemed to be equals. The student couldn't have happened without either of us."

Michael Armstrong and Lesley King are the first to admit that such breakthroughs are rare and much of the work done is still traditional. But they are convinced that the work is (as one teacher puts it) "diff with overtones of iron."

are being driven on to the defensive in some cases the feeling that the main action is elsewhere is leading them to join teams, at least part-time, next year.

A very interesting Countesthorpe development—still at an embryo stage and presenting large difficulties—is the teachers' shift to doing much more generalist. Already English and social studies teachers in teams are fielding each other's subjects, and both are doing some maths. If scientists, PE or arts staff regularly take part in teams, they could also find themselves branching out of their specialist subjects and helping other teachers get work going in their field.

The school offers a range of specialist options, like many big comprehensive at the 14-18 stage. They are perhaps particularly dedicated to mixed ability teaching, but all option systems lead to some streaming by self-selection. Most departments offer interesting approaches to curriculum and teaching methods. To take just one example, Eric Green, in physics, has taken individual learning through worksheets just about as far as it can go—much too far in the view of some other teachers, who say it puts off all but the most dedicated physicists.

Relations between teams and specialist departments started off uneasily. Students who had liked languages, science, art and craft or sport at their high schools signalled for the options. But others were reluctant to leave the cosy team areas. It has become clear that the best way to lure them out is for their tutors to go with them—but that isn't easy when the team areas have to be manned at all times, and a lot of work in the team happens outside school.

But gradually, partly because teachers in teams feel the need to offer more varied activities to reluctant students, informal two-way traffic is developing between some teams and some departments. One group of very unacademic girls do chemistry (under a "food science" disguise) with their tutor in the laboratory. The specialists get together the materials and introduce them, but the work is done (with a lot of chatting) with the tutor.

It may be that the Countesthorpe system is a bit too easy: students like to stay with their friends, and the tutors they know well. But it may also be that in a conventional system, shuffling from teacher to teacher, they would simply turn off.

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Students say it's fairly easy to study, despite all the open areas and chat.

ness" the way is not back but on. They want to find out more about why students are being interested and what keeps their interest going. And they want to learn more about good junior school techniques where teachers stimulate a variety of happenings in a variety of media.

Gradually, some teachers in teams are getting students to use more means of expression—drawing and art and craft, and photography as well as writing and talk. Next year, when chemistry joins teams part time, there will be a chance to explore how much science can happen in the team. There are obvious physical limitations; scientists sometimes need their labs and craft specialists their workshops. But it may be that a lot of the lavishly equipped specialist territory in big secondary schools is not really needed to get students learning. If Countesthorpe goes on moving towards "mini-schools" within the school—and more specialists taking part in teams is a step in that direction—that is just one question they can explore.

Another important idea they discussed this year was "vertical" teams taking students of all ages. It is a logical extension of the system and would solve many problems, not least the psychological difficulty teachers face who, after working for two years with one group and seeing up close relationships, have to start all over again inducting a new bunch of 14-year-olds.

But after the usual Countesthorpe procedures of discussion papers (a sixth-former wanted "vertical teams for vertical people") and meetings, they decided not to start another structural change at this stage. Several people wanted to concentrate on current problems first—how to get more variety in teams; relationships with specialist de-

partments; maths; how to organize things that need larger groups (ranging from netball to drama and English literature); how to oversee curriculum in a system where heads of department have effectively vanished; how to do a better job for ordinary, well behaved middle ability students (people who tend to get neglected in many comprehensives).

Many visitors comment that this sort of thrashing about is all very well, given a dedicated and very able staff. Certainly the battles of the first two years to start the place up and keep it going were totally exhausting. But now, although the staff work very hard in school and after it, they seem remarkably relaxed.

One reason is that a system designed to develop the autonomy of pupils has had the same effect on teachers. It is important to remember that a lot of teachers who are now operating very effectively in the Countesthorpe system came as probationers.

Some of them find they have a real problem about where to go next (a number of teachers here left for promotion). Countesthorpe has already provided two heads and two deputy heads. They are used to working in teams, to being able to try out new teaching ideas without long negotiations about timetables, to take groups of students out of school without fuss, to visit parents when they want to without going through some pastoral hierarchy. They have a hand in the allocation of resources between departments, and in appointments. They are used, when in difficulties, to getting quick and informal help from their colleagues in teams or the remedial staff or the principal and deputies.

John Wills, the principal, has written "In any stage of our curriculum development, up to half a dozen young teachers are likely

to formulate thought-out schemes each worthy of a single director of curriculum. Then there is argument, and the principal's job is no longer in pour oil on troubled waters but to fish in them." He offers the school as a blueprint, but "no example that alternatives are possible and that solves genuine and assistance teachers can themselves generate and maintain change without dependence on initiatives from above and without."

There is no doubt that this autonomy is one result of the democratic system of management, and that the excellent staff-student relations built from the policy of minimal rules and sanctions make it possible for young staff to get on with developing their teaching.

Like all democratic systems, the one at Countesthorpe needs a good deal of vigilance. Fundamental issues still come up. One, which caused a good deal of anger earlier this year and is still unresolved, is whether trade union members should be able to take unilateral decisions—for instance about whether (as they did) to close the school by going on strike—without going through the democratic procedures of the school.

This crisis briefly unravelled another underlying split between staff, which does not affect the teaching and carries no weight in practical discussions of how the school should run, but which just possibly might endanger Countesthorpe's development. The vast majority of teachers see the place as important in education today, but very few teachers—perhaps three out of 60—consider that it can be important only if it is part of political movements; what they call, in capital letters, The Struggle.

They consider, rightly, that educational and political questions cannot be entirely divorced—but go on from there to reject much of Countesthorpe's achievement on the grounds that it is not aimed directly at influencing institutions elsewhere, at "collective liberation", and at getting children involved in changing things other than schools.

But to a visitor, the democracy seems to work amazingly well. If anything, there seems to be too much abstract discussion about whether the school is really democratic, diverting energy from more important educational discussions. The "executive"—John Wills and his two deputies—get on with the day-to-day running of the school, coordinating, advising and dealing with the outside world. They carry a lot of influence in the weekly committee meetings, but are bound by his decisions. Any student can take part in the meetings, and several do. Anyone can propose a motion for general discussion of an issue of any kind.

Allocation of resources, appointments and distribution of salary points now work smoothly. The governors have stopped worrying about the system: where they used to want to keep a detailed check on what was happening, they now seem to be the school things that most governors are happy to leave to the head.

If the democracy is a success, the staff-student relations are a triumph. It is impossible to spend five minutes in the school without seeing examples of the "exceptional warmth and trust" noted by HM inspectors. The staff, that, at least for older students, are confident, education, old-style emphasis simply do not work and, if anything, exacerbate difficulties, and the determination to work by persuasion and consent, seem to have been entirely justified in practice.

It has been a wearing process trying, for example, to persuade students to change their radio habits, to move to the school and places instead of simply hanging out. But the result—getting rid of a lot of tensions that have nothing to do with the main business of getting older students learning—gives hope to a number of discouraged secondary teachers who have visited the school.

Things like theft and damage still happen (and are dealt with as quickly and effectively as possible). But the teachers have achieved through personal relationships a great measure of control over some pretty difficult students. Every time I have seen a Countesthorpe teacher telling a student to get down off a window or stop being idiotic with those matches, the student has got down or stopped.

Teachers working in ordinary schools must make up their own minds how far the Countesthorpe experiment applies to them. Working on all fronts of once—management, curriculum, abolishing traditional rituals and sanctions—they have got a lot more in five years. They have won the reluctant support of all but a handful of parents and the enthusiastic loyalty of all but a handful of students.

They have opened up a lot of questions about how learning is organized in secondary schools and may get further in trying to find answers.

So, in many important ways, the experiment has been a great success. It remains to be seen how far it can be disseminated and, particularly, how far people who control schools will be prepared to back teachers who want to try out some of the ideas developed in Countesthorpe, or to work out their own alternatives to deal with some of the widely acknowledged difficulties and failure of secondary schools that Countesthorpe was designed to overcome.

Students get help from Barry Chapman (left) in a special remedial room. Remedial work is fitted into a normal curriculum.



## Birth of a syllabus

by Michael Austin,  
Director of Literacy and  
Linguistic Studies,  
and Kathleen Kimber,  
Head of French,  
Queen Mary's College,  
Basingstoke

A favourable disposition of stars led much to do with the design of a new French A level syllabus. The college was new; our energy was ready for rearing; our disaffection with the present syllabuses coincided in almost uncanny fashion; and we were confronted by a new kind of sixth-former straining uncomfortably at the leash of the existing examination.

Probably the two most useful skills for a language student are aural comprehension and speaking. However, little weight is given to these skills in the French syllabuses of examination boards and the conscientious teacher has little time left to develop them because of the requirements of the literature and prose papers. It became apparent that our students were almost unanimous in their dislike of the compulsory literary content of set books and that many of them were seriously handicapped by the nature of the prose. Their objection to the literary paper, which we shared unreservedly, were in no sense based on inability to enjoy French literature, but rather on the lack of relationship between the skills developed by the course and those tested in the examination.

Between the idea of sensitivity, originality and logical analysis and the reality of 45-minute memory tests fell the shadow of an expedient oesochronism. The prose paper demanded an esoteric skill for which most students would have no use in their adult life, and tested it in a highly contrived, deliberately artificial way. To base decisions on a limited time limit makes prose translation an inquisitorial examination for candidates who are verbally confident and syntactically agile. For those who are not it is a nightmare which is arguably unfair. To expect 18-year-olds to show proficiency in translating an awkwardly complicated piece from their own language into an alien one is to demand an expertise which is not required of professional translators who always work into their own tongue.

These objections would be serious if voiced by or on behalf of the traditional, university-bound sixth-former, but they have become even more crucial for the new sixth-former. It would be a mistake to think of a comprehensive sixth-former as simply consisting of conventional, academic, two or three A-level candidates alongside a strain of less able, but ambitious, students who constitute the new sixth-former. It is clear that such assumptions about students' expectations are mistaken. In particular, the belief that university represents the logical continuation for the brightest. An increasing proportion of such students look to polytechnics, teacher training and direct entry for their chosen careers. Evidence suggests that this is partly a reflection of dissatisfaction with what they see as the traditional content of university courses. It is also the result of their exposure to the thinking of those who do not automatically see university as the top of the tree. The new sixth-former in a comprehensive is more inclined to look for useful, life-related elements in a course of study, whether he is studying three A levels or only one.

Two further inadequacies of the existing syllabuses seemed self-evident: the lack of opportunities for students to pursue an individual interest; and any requirements for the student to display knowledge of French (unless such knowledge is interpreted as a textual knowledge of four books, one of which must be replaced by a prescribed topic).

It is significant that the traditional A level French syllabus was designed primarily for those who intended to continue their studies in the new situation, a course ought to be such that it would be as well as

encouraging more varied activities and skills which would be of immediate use to all who were confronted either professionally or socially with a situation requiring knowledge of French and France.

Our these concerns had been identified, the task of devising a new syllabus was not as difficult as we had anticipated. We agreed we should first design a course which met our criteria and then draw up an examination to provide certification. We were determined that our syllabus would not be any easier than the existing one; that it would afford practice in reading, writing, listening and speaking, with more emphasis on speaking than in the past; that it would demand on interest in France; that it would require some study in depth; that it would have a significant element of pupil-centred learning; and that it would develop transferable skills.

We began by discussing the kind of course which would meet these criteria in full. We agreed at once that as much as possible of every lesson should be conducted in French; that it became a normal means of communication, even if imperfectly used, rather than an embellishment like a formal suit for special occasions. We agreed that the variety of material must include works of literature, newspaper articles, magazines, tape recordings, radio broadcasts, television and films, as well as textbooks.

It was when discussing, over many meetings over many weeks, how we could most profitably use the time, that we had to analyse and categorize our ideas most closely. We went to devise a course at the end of which our students would speak about France as intelligent laymen in business or social contexts. We were also determined that in the future we would not turn out any more candidates with good A level grades who did not know even approximately where Paris was, to whom the Fifth Republic meant nothing, or who had never heard of *les cadres*.

Such generalized ignorance was not adequately offset, we thought, by the ability to quote accurately from *Britannicus* or expatiate on the character of Colombe. It was clear that this kind of knowledge would come from the same sources as similar information about one's own country—radio, television and the press. By listening to recordings from French radio, as well as the excellent BBC series such as *Voix de France*, *Horizons de France*, *Items in French*, *Our Own Correspondent*, by watching the programme *as Reportage* and *The French News* (we have given priority to the purchase of tapes and cassettes, rather than sets of set texts), by using French newspapers, and by reading as simple fare for discussion, essay topics and translation into English, we could deal of information about France can be absorbed both naturally and pleasantly.

For many of us the study of literature has been the most enjoyable feature of A level work, perhaps because we have not had to warm up our pre-cooked 45-minute recipes recently. We wanted very much to make students aware of the enjoyment of reading and lay down the basis for aesthetic judgments. Our impression that the study of set books was of limited use as a preparation for serious literary study was reinforced by what we knew of the reactions of many university teachers. Yet to deny the students who were able and interested the opportunity to match in French the kind of English would have been absurd.

We decided on a double approach. Our selection of material would include some textually accessible works, such as Camus' *L'Étranger*, Sartre's *Les Jeunes Femmes*, or Anouilh's *Antigone*, all of which lead easily to discussion. These would be read and discussed by the group as a whole in French. Without any need to process ideas into essays, the students would be able to analyse, become more enjoyable and less inhibited (this we knew from experience even within the existing syllabus), and ideas for further individual reading arise quite naturally. We anticipated that in some students this exposure to literature will open their eyes to the possibility of a study in greater depth of an author or a theme. We also anticipated that the time allowed for individual

learning to choose a topic on a



The new syllabus moves away from Racine, towards the everyday needs of language students.

literary subject. In the second year of the course, they can develop this into a major project which would require an in-depth study.

Discussion in the French department took six months to reach this stage. Our conviction that our thinking was, in general, correct was strengthened by replies from six students of one of the town's grammar schools. They were sent a questionnaire about how they were using their French and the suitability of the course they had followed in the sixth form.

At the end of November, 1973, we wrote to the London board, outlining our proposals for a course leading to a new examination at A level. The reply was not encouraging and we decided to write to all the other English examination boards in February, 1974. The most encouraging reply was from the Southern Universities Joint Matriculation Board, who said the board were always very ready to consider any proposals put before them. At their suggestion, we drew up an examination syllabus and the first draft of some specimen papers for a meeting in Bristol in June, 1974.

When we turned from discussion of the course to the drafting of an examination we had three principal criteria. We wanted the examination to test the skills which we hoped the students would develop. Each part of the examination, as far as possible, should test one skill only. We wanted the demands of the examination to resemble those of using French in adult life.

Our examination has papers on essay writing; translation into English; aural comprehension and dictation. There is, in addition, an extended oral examination and a project. The project is a topic related to France, chosen by the candidate and approved by the board, and is a resource-based, pupil-centred study. It is to be marked

## Access for disabled

from Marie Anderson,  
Florence Trelgar School,  
Alton, Hampshire

I join wholeheartedly with Mary Jones' (Study tour for the disabled, Forum, May 9) in her appreciation of the opportunities offered to disabled students by the Open University. Geoffrey Tudor, senior counsellor for disabled students, and his team have spared no effort in their endeavour to meet the very varied needs of handicapped students.

Miss Jones, however, is on much less firm ground in her description of the "Wages of Ignorance" for handicapped children in England and

by the centre and monthly individual assessments will be made and recorded. These records will be used in the final assessment.

This part of the examination is particularly important for the contribution it makes to the flexibility necessary when providing for the assorted expectations of the new sixth-former. Potential university language students can concentrate on a literary topic (in rather greater depth than required by the study of four set books), future engineers may opt for a study of *les travaux publics*, others may choose a regional study, the French cinema or whatever theme has caught their imagination.

We are certain that our examination, taken as a whole, concentrates on transferable skills and relates directly to France and the French. In that there is an optional special paper in prose composition and exploitation of texts, we are confident that candidates of every kind will find the examination suited to their particular needs.

Equipped with the description of both courses and examination, we visited the SUJMB in June last year. We were greatly helped by illuminating suggestions and encouragement in perceiving. We agreed on a timetable of formal submissions. In addition we were urged to publicize our activities in Hampshire and seek reactions to our proposals. A number of schools and colleges replied to a cyclostyled letter from the county languages adviser, many of them expressing support and interest. We then wrote to the 13 universities most often entered on UCFA forms by our students, with a copy of our proposals and a request for their reactions to candidates prepared according to our syllabus. Their replies varied from the enthusiastic to the uninterested, but none suggested that they would not accept such candidates.

Moreover, there is no waiting for children in need of special education, either at the age of nine to 11 years or at the later stage of sixth-form. If there was, we would not increase the number of children offered to sixth-formers.

Our girls leave whenever they are ready, usually at 16 or 17, to go on to sixth-form colleges. Hereward College, for disabled students, to colleges of advanced education or alternatively to a job with career prospects. The Civil Service, for example, has a few leavers are available to go. In the open market?

I wonder whether it is not assuming that all other disabled children wishing for academic development are being well taken care of in state schools. The children in state schools are the children who are being well taken care of in state schools.

It is clear, therefore, that the number of places offered throughout the country is far in excess of 150.

After three meetings with interested colleagues in the area, addressed a conference of 20 form language teachers on our proposals. Four more establishments began to pave the ground for the adoption of the syllabus's adoption. At this stage, with our own ideas and observation confirmed by our colleagues, past and present, we submitted our final proposals to the board in December, and asked to meet the meeting of the language committee which would discuss the syllabus in January.

At this meeting we talked of proposals, explained points of detail and simplified the thinking behind the allocation of marks. The principles underlying the new syllabus appeared to be accepted. The board were always concerned to be fairer than obstruct. We left in a confidence which was born of a letter from the board accepting our proposals.

The next stage was the A level Schools' Council, whose proposals were set for February 21. We were invited and the question of the great change to the special paper in the Schools' Council, whose proposals were set for February 21. We were invited and the question of the great change to the special paper in the Schools' Council, whose proposals were set for February 21.

The conclusion to be drawn from this exercise is varied, but very encouraging. It is clear that the exercise is open for a radical change to the new syllabus which is a reflection of the needs of a sixth-former. The exercise is open for a radical change to the new syllabus which is a reflection of the needs of a sixth-former. The exercise is open for a radical change to the new syllabus which is a reflection of the needs of a sixth-former.

# Barefoot through the heather

A profile  
of Alison Potts

I'm Shirley Temple, the girl with the curly hair,  
I've got dimples and I wear my clues up there.

I'm the able to play the Betsy Binkie,  
I'm Shirley Temple, the girl with the curly hair.  
(Glasgow Street Song)

As I was walking down you hill—  
'Twas on a summer's evening—  
There I saw a bonny lass  
Skipping harp through the heather.  
(Scottish ballad)

Allison Potts, nee McMorland, is, according to many of those who have earned a right to an opinion, the finest women folk-singer of her generation. Although she has always sung she was slow to discover her distinctive talent. She spent her childhood in Glasgow and Strathclyde, and in her teens the family migrated to Wolverhampton for a few years. She recalls singing Polly in a school production of *The Beggar's Opera*, but never vividly remembers running round to her grandfather's house at lunchtime to cook his dinner, and singing for him while he accompanied her on his piano. Frustrated that while her voice soared freely, his own was too weak out to express the music inside him. On, then, to art school, and then in Bretton Hall College of Education, while her parents returned, thankfully, to Scotland. By and large, Bretton proved a disappointment; but memorable for a lively production of *Brexit's Mother Courage*, and for her meeting her husband, Richard Potts, now establishing a solid reputation as a writer of fiction for children. —An Owl for His Birthday, *The Hatted Mink*—and deputy head of a junior school near York.

They went to live in Helston, Cornwall; two children soon followed and, without thinking, Alison sang and sang to her daughters, retrieving innumerable songs that she didn't know she knew. One morning, at about seven o'clock, the family were roused by the hubbub of a brassband: "Impossible! What's happening?" It was the rehearsal for the Helston Furry Dance. In the evening they joined the parents and grandparents who followed the children's dance. Children under seven were barred from taking part in the official event, so their daughter, Kirsty, two and a half, had to make do with the policemen who brought up the rear, on traffic control.

The dancing in the streets was for real, at least in the trial run, before the tourists arrived and took over the town on the day itself. That's what it's about—the official day—but the whole community dancing for the joy of it—in Spring, the feeling of Spring blanketing you. You really feel the new life inside you—you feel it so strongly in Cornwall. Maybe it's the hedgerows—they're so overhanging—and the smell of earth so strong. I don't know what it is, but that was my unconscious contact with what I'm now concerned with.

Shortly after this she sang in public for the first time—as a fill-up at a PTA folk concert; she was diffident and uncertain, but her voice made its mark, and soon she was singing with Folk Club. It was through this that she felt that she became a person in her own right. "I was 22. I bloomed! All that had been lying dormant in me—it all came out. I found I had the courage to say 'If you don't do it now, you'll never do it. This is how you feel: express it!'"

So she extended her repertoire; yet she knew that something was not quite right. She was singing mostly English songs in English voices, but emotionally her "vibes" are Scottish. "The test of life down in Cornwall was so soft. It came out in the form of the singing. My unconscious reaction was: all you can do with English songs is that there's a David in Bronte (the definition of a collector of English and American folk songs) introduced me to the music of Scotland—the fine dramatic variety of Scottish songs, the breadth, the sense of something much bigger than yourself."

Since then, it's clear that Hamish Henderson, collector of Scots songs and ballads, has had a profound effect on her development. Some years ago Henderson went to Glasgow where all the travelling people were converging for the berry picking. The



Alison Potts teaching children.

travelling people gathered a fair harvest of berries, but the songs that Henderson gathered from them beggared his expectations. "It was like holding a can under Ngora Falls." (The BBC at this time was still suffering from the weird illusion that the Wiltshire kind of showbiz represented Scots song.) Henderson began a festival, which subsequently moved to Kinross, and it was there that Alison was first recognized by her ears.

The competitions organized by the Traditional Music and Song Association of Scotland were in various classes—diddling, whistling, fiddling, singing and so on. In the first year she won the singing prize with a Shille Stewart, the next year to her mother Belle; the third year in Lizzy Higgins, the daughter of Joanne Robertson; and in the fourth year to Alison. "Nobody knew me and I slept in the car; because I'd been out of Scotland. I was a completely unknown quantity. Afterwards, I really went giddy. I knew exactly what I needed to be shown—and Hamish showed it to me. Listening to field recordings and meeting traditional singers made me realize that I was falling into a pattern, becoming another link in the chain of carrying these songs. Singing one particular song, Skippin' Barrit through the heather, that song taught me what I now am, as a singer. I found my voice in it. I felt that other mouths had shaped this song—I can hear other voices having shaped the words. Down in Cornwall, my voice was pretty, not much weight to it, and all that was with her. That hard-hitting voice, was a great discovery. I knew that these were the songs and these the singers from whom I could learn."

It was in Helston that Alison first went into school to sing to children. She had already built up a repertoire of songs and games with her own daughters, but she dug out Cornish versions for her Cornish audience, and discovered that they could learn a song in about three minutes flat. She believes profoundly in the power of oral learning. Since coming to York she has continued to work sporadically in schools and music centres; her sessions draw on a lot of the children's own material, and the adults are drawn in to a variety of activities—singing, dancing, making things up, inventing, singing, reciting and so on. She gives as much time as she can find to the work of collecting. Older women are her main source; she is convinced that girls and women are the major carriers of the oral tradition—girls in the street and playground, and women in the home. The idea is to collect the songs and the stories of the past, to preserve them as a legacy to the future. She has a purpose, a function: the sorting of toes and fingers reinforces the parrot-child bond; later it accompanies the making of poetry, the making clean of sticky fingers, putting shoes on, getting undressed, and going to bed. Every song, however trivial, is a strand in the life of the singer. "Jack be a humble, Jack be a quick..." mocks the Candelmas holiday of young ice-makers; kids who spent all their days in ice-making in a circle around a candle had to jump over a two-foot candle—except for those who had gone blind from over-exposure before they were seven.

Continually she discovers new treasures from her elders—Lucy Berry, Amy Janey, Ada Cade, and others of 70s years. Last year she used such material for a programme of songs about childhood to accompany an exhibition of Victorian photographs of children.

ran at the Impressions Gallery in York—the first photographic gallery outside London—and next year will be presenting a similar programme about women. "We call them 'Fingerlings'—a collage that she has been instrumental in making to accompany an exhibition on Old York, to give a vivid sense of how York sounded many years ago. This also forms part of a pack, including photographs and questionnaires, designed as a guided tour for school children visiting York."

Recently she completed a film about daily contacts with oral tradition, especially in children. The film, the making of which was supported by a grant from the Yorkshire Arts Association, progresses from the young child's experience with parents and grandparents, through children's group games in street and playground, and on to the songs and stories of the past. The film is designed to promote the pleasure of recollection ("Goals I used to do that"), to convey a sense of the living functions of songs as ritual and celebration and to consider what distinctive satisfactions such games and songs provide.

Now, she would like to propose multi-media packs—cassettes of old people talking of their past lives, photographs, songs, with teaching notes for lessons in social history—but unfortunately she remains primarily a singer. Although she accepts occasional bookings, she doesn't regard herself as part of the folk club circuit. She has worked out her solution as a singer for herself, often at the kitchen sink, the folk clubs played a very small part in her finding her own voice.

My first priority now is to carry on singing. I have served my apprenticeship and I'm now ready for the great beyond."

Geoffrey Summerfield



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## Impressions of déjà vu

CAROLYN O'GRADY on the Isotype exhibition at Reading University

The pictorial representation of statistics has apparently little countenance with children's information books and even less with road signs. Yet examples of all three appear at a small but intensive exhibition at Reading University during the next few months. The theme of the exhibition is the work of Otto Neurath, who invented the Isotype method of visual communication. Though probably little known outside departments of typography, this movement has had a pervasive influence on many aspects of daily life.

The exhibition is drawn from the archive of the Isotype Institute, which were deposited with Reading University some years ago by Marie Neurath, and commemorates the fiftieth anniversary of the foundation of the Gesellschaft für Wirtschaftswissenschaften (Social and Economic Museum) in Vienna, from which the prolific Neurath publishing venture sprang.

The Gesellschaft für Wirtschaftswissenschaften was set up after the war by the Austrian government at the instigation of Otto Neurath to explain housing and social projects. Neurath was previously director of the Museum of the Economy, Leipzig, and general secretary of a Viennese housing cooperative.

For the new museum Neurath and his future wife, Marie Neurath, designed charts and other items to express pictorially simple statistical information. And from then on this search for a universally comprehensible pictorial language was to dominate their lives. The resulting movement produced, among other items, posters; children's information books; statistical charts on most aspects of the social sciences; educational filmstrips and films; illustrations for books, journals and other publications; and what Neurath probably regarded as his chief contribution to graphic communication—an international dictionary of symbols.

Geographically the movement's influence also changed, as the Neuraths moved from Vienna to

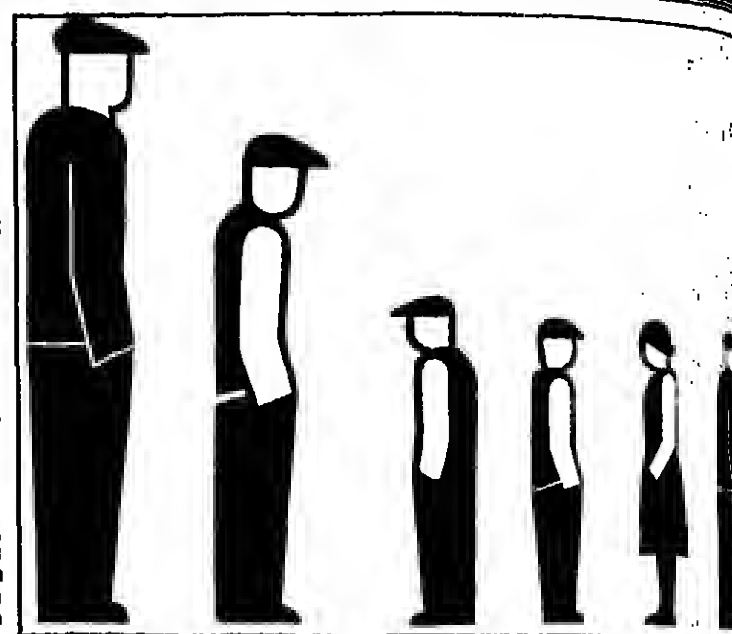
Holland and finally to England. Here they established the Isotype Institute, which produced charts to illustrate the Beveridge report; documentary films which Paul Rotha; filmstrips, published by Common Ground; and children's books with diagrammatic and pictorial illustrations in many languages.

Visitors to the exhibition who consider that the educational pendulum has already swung too far from the study of literature and primary sources towards television and other visual media, may be inclined to dismiss Neurath as another manifestation of this trend, even though a pioneering one. His motto—'a good picture is worth a thousand words'—and 'one idea remembered is better than a hundred figures forgotten'—do nothing to dispel this view. Nevertheless this would be unjust. Neurath's original aim—to rid statistics of their mystique and present them in an easily assimilable form—still holds good today.

And it is in this area—graphic communication in the social sciences—that his work has had the most lasting influence. The conventions he imposed on the setting out of this information did much to correct some of the worst abuses. It is, of course, true that not all statistical arguments can be represented in this way. But Isotype charts, unlike many which were to follow, do not bite off more than they can chew. The viewer is not sent scurrying for a paper and pen to try and unravel the ideas.

As Michael Tymoczyn of the Reading University department of typography and graphic communication, says in the exhibition catalogue, the visual quality of Isotype work is difficult to describe. It is simply better than most of the work done in the field at the time and since.

"Like work of quality in any



From the Isotype dictionary of symbols.

field, Isotype charts have a beguiling simplicity which conceals the time and effort which went into their production.

Though the influence of the Isotype movement has been wide, especially in graphic statistics in television and publishing, the essential message of the movement, that there should be a standard way of representing things, has been largely ignored. Many of the symbols seen today in railway stations and other public places are influenced by the Isotype dictionary, but international symbols vary greatly. Still, however, the predominant feeling of the exhibition is the knitting together of diverse impressions of déjà vu.

In England the influence of Isotype was felt most strongly during and immediately after the Second World War, when numerous charts and publications appeared. Isotype still exerts its influence in graphic communication courses and in works already described. As a modern example the exhibition has mate-

rial from the Nuffield Museum. Project to demonstrate the similarity between this and Isotype work.

In America and the Netherlands are institutes which develop the Isotype approach and methods of it. There has been considerable interest in Japan. The exhibition has been researched, with catalogue, information sheets, and film, fascinating study. Section on the beginnings of the movement, the scope and methods of Isotype, also includes parts on work influenced by the Neurath and old prints of cities and the nineteenth-century examples of visual education and Isotype guides—and on the Neurath's influence on future work.

The exhibition will be at the University Library until Jan 17. Open every day except during the vacation. Inquiry: Mr J. A. Edwards, University Library, Whiteknights, Reading RG2 2AB.

## Umpteen approaches to country life

by Derrick Gollard

Guide to Countryside Interpretation: Principles of Countryside Interpretation and Interpretive Planning £1.25. Interpretive Media and Facilities £3.35. HMSO.

Study of the British countryside has long been important in the school curriculum. For some it was the nature study, superceded by the rural, for others some aspect of field work. The countryside is the teacher's greatest resource area.

The Countryside Commission is the statutory body charged with reviewing all matters relating to the care of the countryside, which allows it to be well informed and adept at disseminating useful information. This is well illustrated by these books.

Countryside Interpretation is a recent, but most appropriate, term used to describe those activities which explain the significance, and encourage the awareness and understanding of the landscape, natural resources and role of man in the countryside. Conservation is emphasized but the underlying theme is that of man and his environment.

Part one, by Don Aldridge (Countryside Commission for Scotland), outlines and discusses the principles behind and the nature of countryside interpretation. It provides good background reading, tracing the development of this

approach through the school techniques of discovery and showing how they can be used by the public. Aldridge asks many questions which will be useful for the teacher who is intending to work outdoors with a party. He examines the need for planning in advance to make use of available facilities. Giving credit to such bodies as the Field Studies Council and those who have successfully organized school trips, he recognizes that there are still a large number who fail to do justice to the resources they use.

While primarily intended for planners of visitors' centres, it will do the customers an immense service to discover the reasons behind the planning. "If we simply conduct school parties round a visitor centre, or give them a nature trail guide to follow, we are giving them the 'sewer book' and not extending them or providing a learning situation."

Interpretive Media and Facilities by Keith Pennyfather is complementary to the first book. It outlines the objectives of countryside interpretation and examines how this is carried out. The book begins with a useful glossary of relevant terms, putting the reader in the picture. Then follows an exhaustive evaluation of 63 methods of interpretation. These include self-guided tours, display

panels, models, demonstration of the more complex elements of television and multi-media presentation. All are thoroughly analysed on 18-point checklists. Aldridge includes safety and discipline as well as important points of interpretation and relationship to the visitors. Each method is illustrated with several examples but the author wisely leaves judgement to the reader.

It is interesting to note that the methods available in the past are still used by many professional guides. Teachers, who have experienced guided visits, may question the value of this method. However, the book is an excellent reference and a useful guide to the resources available.

Full details, including names, addresses and a description of over 130 countryside interpretation sites, is given. The book is a valuable acquisition for schools, acquiring for this information the bibliography, this book would be a valuable acquisition to any library. It may be difficult for planners, but teachers will find it useful to use the information to plan their visits. The book also finds themselves having to use the resources of the past.

### Correction

Our review of *Spelling Workshop* (TES, May 9), published by Basil Blackwell, gave the impression that the workshop consisted of 75 cards. In fact it is divided into six phases. Each phase consists of 75 spelling cards, eight picture cards, eight text cards, eight worksheet cards, with additional "extra" and rule cards. There are also associated worksheets.

This phase is a total of 700 cards in the complete scheme, together with worksheets and teachers' book.

### Family dilemmas

An eccentric aunt struggling to avoid being sent to an old people's home; the daughter of a well-off family who is caught shop-lifting; a middle-aged housewife faced with the break-up of her marriage and the prospect of a new life; the four families portrayed in *Family with Secrets*, a new drama series from the Churches Television and Radio Centre. The basic theme is that of the family, the reality of human relationships so effectively as family life.

Each programme is deliberately

open-ended and contains a city Christian message. The producers think it could be a good idea for a high school community or social studies or education or religious education. The series is a case study of a family, a case study of a family, a case study of a family. The series is a case study of a family, a case study of a family, a case study of a family.

Available for sale or hire from Terry Douglas, Church of Mary, Hill Road, Bury, Warrington, Cheshire, WA2 1DR.

## An unashamed Jack of all trades in search of recognition

FRANCES STADLEN looks at the role of the educational media designer

"Strange animals they are—hybrids you could say." "They only exist in the minds of those who think they belong to the new species."

If educational media designers find such remarks dismissive, they can hardly deny the aptness of the "jack of all trades" epithet. They have twice now resisted even their own collective efforts to settle, once and for all, the questions of professional status, a career structure, standards and eligibility. They and those for whom they wish to work remain unconvinced of their precise identity and value.

That is not to say that these nouveaux arrivés are not in demand in educational circles. On the contrary, it is they who design the worksheets, wallcharts, models, films, slides and tapes that have become standard, if not essential, props to the modern curriculum.

Misgivings, however, have arisen. This is partly a result of the haphazard way in which the use of resources has developed—that is to say, in response to local demand, and subject to local budgets.

One designer, for example, might find himself involved in the planning stage of producing or using resources, another in actually producing them, evaluating them, teaching teachers to use them or in administration. These tasks call for a variety—and hierarchy—of skills, and immediately pose questions about the differentiation of function, and, consequently, of salary and status.

To help to ascertain a teacher's broad objectives is a very different

matter from actually producing the materials he needs in a particular medium according to a particular brief. The maintenance of hardware and the responsibility for setting it up in the right place at the right time require one kind of expertise, evaluating its usefulness quite another. Storing and retrieving information or coordinating and budgeting the resources which a school has is something else again.

The fact that any or all of these tasks may be required of people who wish to work and to be recognized as educational media designers explains why they find it difficult to agree on a career structure, and why they cannot, and mostly do not wish to, join either of the professional bodies representing them.

A further difficulty is that the opportunities for work are spread out in schools of every sort; in resource centres servicing schools; in teachers' centres and curriculum development projects; in higher education; in ETV and the Open University; in educational publishing and in government and industrial training centres. These jobs are often highly specialized and have little in common.

There have been some attempts to pin down the job definition of a designer in education. Plymouth College of Art's course in Audio-Visual Techniques for Education, now in its eighth year, was a pioneer. Until recently it was un-

quo in its combination of a technical in media design and production skills with a solid grounding in the history, sociology and psychology of education, including a term in some form of institution.

In expressing misgivings about the growing tendency among colleges of art and technology to include education merely as an option in the closing stages of a course in graphic design, Roger Bellamy, a lecturer at Plymouth, reflects a substantial body of opinion.

Another subject which attracts a great deal of comment is the way in which the IEA, potentially one of the biggest employers of educational media designers, and practitioners in this field, are servicing their resource centres.

The IEA course for media resource officers at Wandsworth Technical College lasts 15 months and continues on a day release basis. Whether this is sufficient for competence in a field embracing at least two disciplines is open to question. The department at Plymouth, which it can hardly be considered adequately into three years.

The fear is that a media resource officer will justify, by himself, the label "jack of all trades" in the most derogatory sense. With more time and training, it is argued, it should be possible to make a virtue of this necessity. On the other hand, the IEA's initiative in establishing a proper career structure is widely applauded.

Defenders of longer courses old

that the designer who knows enough about education to be acceptable to teachers and local authorities, when resources are required, is more likely to be invited to come in on the planning stage. When more, it is only if he is in an this stage that he is likely to make a good job of the end-product.

The availability of a skill that can communicate as well as educate is thus in everybody's interest. The designer will still be a hybrid, but at least he will no longer come from such ill-assorted breeding grounds, ignorant of educational requirements, as he did in the past.

There is, however, another school of thought which argues that while it is necessary to design appropriate courses it is not sufficient. What we need now, it is argued, is a lot of breathing space. Lecturers are still confident that their students will continue to end up with credits commensurate with their ability and training. But Norman Willis, Assistant Director of the Council for Educational Technology, among others, thinks that an new course should be offered while the position of support staff is in a state of such confusion.

It is to clear up the confusion and to decide whether courses in educational media design are in fact a real danger that designers, who propose to gather information in as much detail as possible about the current position of support staff; to obtain for comparison the current job specifications for the various categories; and to ascertain the type of training required at

each level. Through their sector requirements committee, the council have for some time been inviting interested parties to apply for registration as participating bodies, and it is with them that they hope to work on their survey.

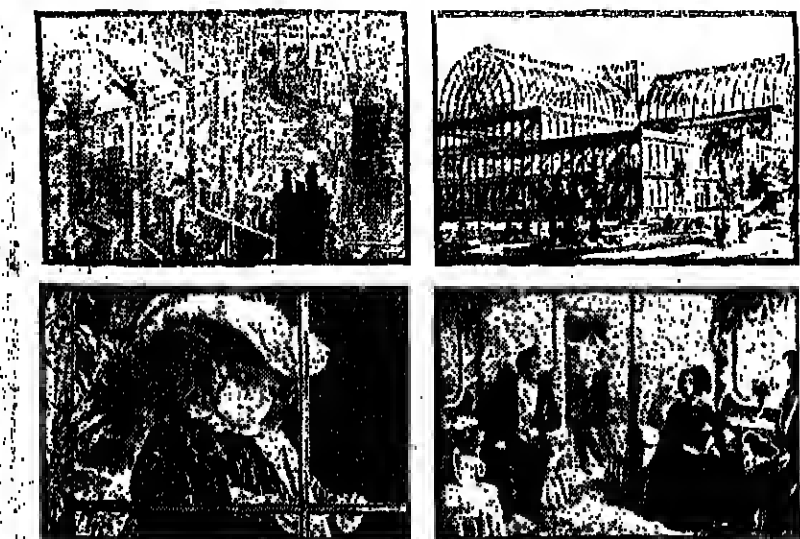
Though at pains to point out that, in the absence of proper information, the council have no print of view, Norman Willis emphasizes that few authorities have any establishment places for designers, and that although there is undoubtedly work to be done that calls for their skills, appropriate job specifications are hard to come by. Even lecturers would admit that a period of apprenticeship, perhaps as a technician, is generally necessary before a student can expect to find job satisfaction.

Cuts in local authority spending may mean that attractive jobs at resource centres as well as the other potential sources of employment will dry up. L.E.A.s might find they have to fill in the IEA's example, or at least give teachers the minimum in-service training necessary to handle their own resources themselves.

Few would argue the desirability of such a development. If it happens, though, there is a real danger that designers, who wanted to commit themselves to education will defect in large numbers to the comparative security of commercial work. If they do, schools will have lost people whom they may well decide later they could ill afford to surrender.

## Victorian myths and realities

by Deborah Thom



Contrasting views of Victorian England.

The Victorian Era. EAV Butterley Street, Leeds LS10 1AX, £9.75, tape £5.90.

The producers of this set introduce it in the teachers' booklet as a "two-part correlated audio-visual set (which) shows many aspects of one of the most complex periods in English history". The filmstrip of 104 frames goes with a tape or record lasting about 35 minutes.

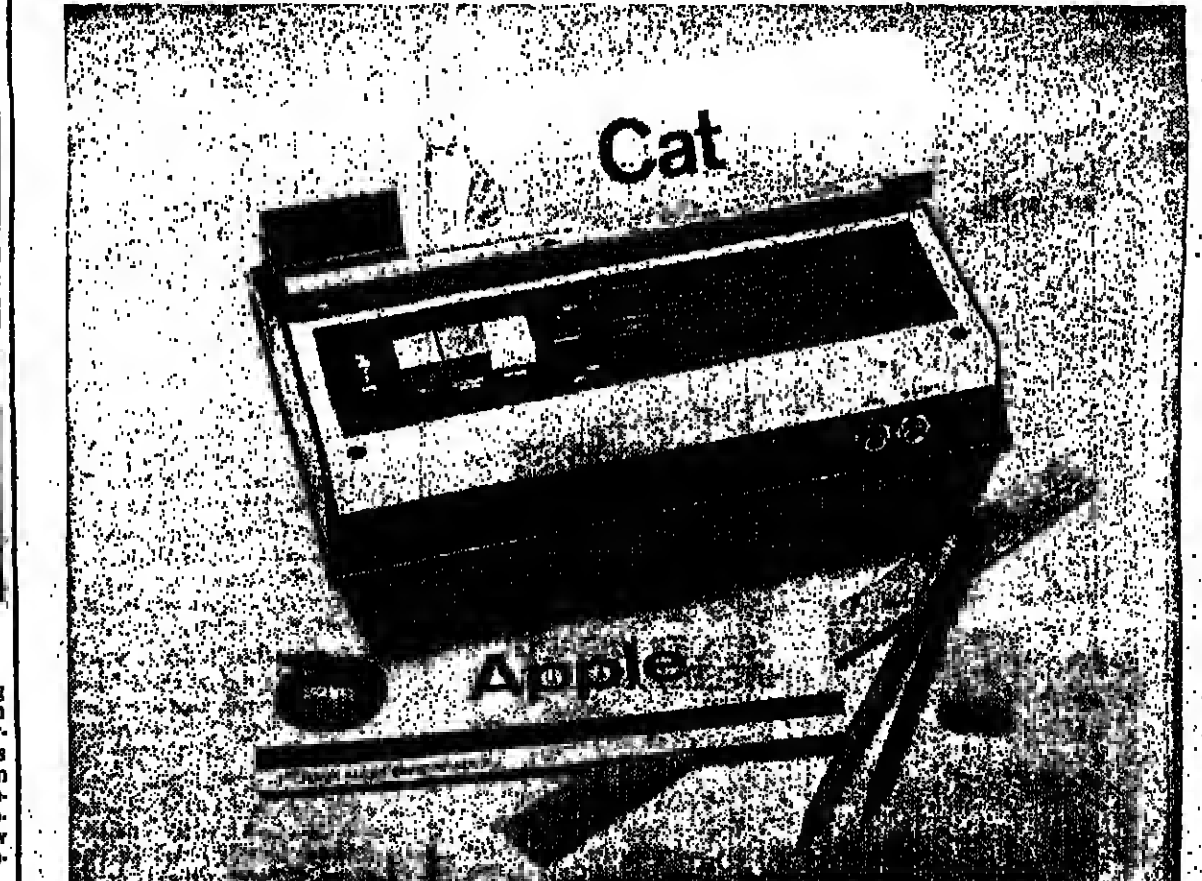
The whole is divided into two parts, each of three sections, on "The New Queen and Traditional England", "Progress and the Revolution in Transport", "The Middle Class", "Commerce and the Great Exhibition", "The Working Classes and Urban Life", "Ideas and Thought", and "Politics and Imperialism". These titles indicate the difficulties of compression that the authors have not in many cases faced up to with success.

The first five frames deal with the queen, her character, and her reign. "We are told she was a great success. The teacher has to switch off and explain this unfamiliar word, then switch on again and discover that this is justified by 'Her reign was to last 63 years, the longest reign in English history'. Four frames devoted

to the aristocracy follow, describing their dominance of society through their "lavish balls", "splendid carriages" and "stately homes". This loose use of the word society in two meanings—fashionable amusement and the social order—explains the author's inability to show any sensitivity to audience perceptions of words.

The next section shows a further juxtaposition between words and pictures. First, for example, they show a review of steam, coaches and engines for the railway and steamships, omnibuses and underground railway. The class system is dealt with by a sociology with rail travel classifications although, "The increased transport facilities gave people a greater freedom of movement. The student is invited to think about the advantages of the railway age."

The next section has the middle classes emerging in the way they do in this sort of history as if they were a new species. Four frames devoted



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## All shapes and sizes

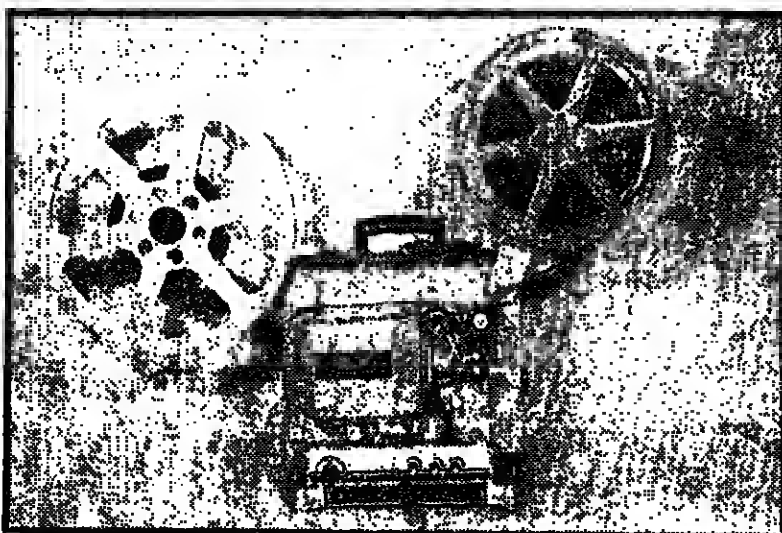
by A. H. Crocker

Elf Series R 16mm Sound Film Projectors. Supplied by Elf Audio Visual Limited, 836 Yewell Road, Trodridge Estate, Slough, Berkshire. RT0 E423, RT1 E431, RT2 E445, RT3 E562, RM0 E376, RM1 382, RM2 395, RM3 E478, RST0, RST1, RST2, RST3, available to special order.

As can be seen from the list of prices, there is a wide range of Elf portable 16mm projectors in choice from. All have basically similar mechanisms for picture projection and sound amplifiers. The model which I have used is the RT1 which is the model best suited for general school use, both in the classroom and, when occasion demands, in the school hall.

All RM models have the film threaded manually, the RT models provide automatic threading and so do the RST ones, but with a special take-up spool they provide fully automatic spool-to-spool threading. The suffix 0 indicates a built-in loudspeaker, 2 indicates the facility to play back magnetic sound tracks and 3 indicates the ability both to record and play magnetic tracks. Models suffixed 1, in common with the 0 models, provide just the normal optical sound track playing facilities. Of course, those with magnetic track capabilities will also handle optical sound. The 1, 2 and 3 models have an extension-type loudspeaker in the removable cover to which is attached an 18-metre long lead.

The Elf series R projectors are developed from the previous S



The Elf RT1 projector.

series which became very popular with schools due to attractive prices, good performance, simple operation and serviceability. These new models are an improvement in all sorts of ways and since their introduction over a year ago have shown no signs of causing any reduction in the popularity of Elf 16mm equipment.

The projector gives a good light output, a feature which is essential for efficient use of 16mm educational films in the classroom. The EFL halogen lamp with its integral dichroic reflector is the same as that used in the previous series. The small size of the film in this 24-volt, 200-watt lamp with the reflector produces a well controlled beam of light which focuses efficiently through the projection aperture and the 50mm f/1.3 objective lens which is supplied as standard.

A faster film pull down on this new series ensures a more efficient use of the light. This has enabled a slight reduction to be made in the lamp voltage without any signif-

icant reduction of light output. This voltage reduction, however, is far kinder to lamps and so a longer life should result. Even greater extensions to lamp life are possible if the reduced lamp level setting on the rotary main control switch is taken advantage of. Light output reduction at the reduced level setting is definitely noticeable, but pictures should be sufficiently brilliant in most situations, and a lamp life of more than double the normal is possible.

In respect of picture quality there are shortcomings in resolution which are noticed by those sitting in the front when a picture contains a great amount of detail. For most purposes where screens not exceeding 1.5 metres or so in width are used, the quality is quite adequate. Sound quality is up to the standard that can be expected of 16mm film and the treble and bass tone controls provide a good range of adjustment. A sound power output of 20 watts is available from the amplifier. For public addresses a microphone socket is provided (3-pin jack) and unlike the previous series this may be used without the projector motor running.

Serviceability is a generally well-known property of Elf projectors and this has been extended in the R series.

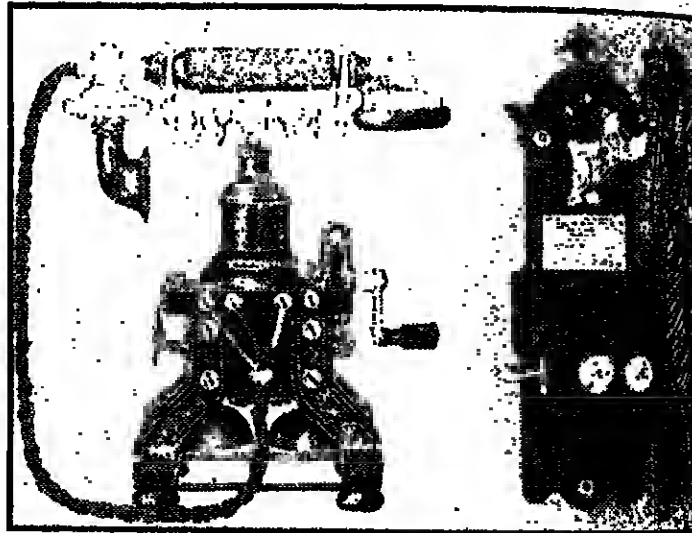
## Wallcharts

A wallchart called *The Building of Glasgow 1100 to Today* has been produced for European Architectural Heritage Year and the Glasgow 800 celebrations by Barclay Walker Publications, Glasgow.

Right is the Stock Exchange House, an illustration from it. Charts are available flat or in a folder direct from Barclay Walker Publications, 193 St Vincent St, Glasgow G2 5QD at a charge of 75p. Bulk orders are available at 50p.



Below from 'The History of the Telephone Instrument', a chart which is available free of charge to schools, colleges and youth groups in this country and to the British Families Education Service, The Education Service, Publishing Division, Post Office Telecommunications Headquarters, 2-12 Gresham St, London EC2V 7AG.



Computers in Education, the second world conference organized by the International Federation for Information Processing (IFIP) will take place in Marseilles from September 1 to 5.

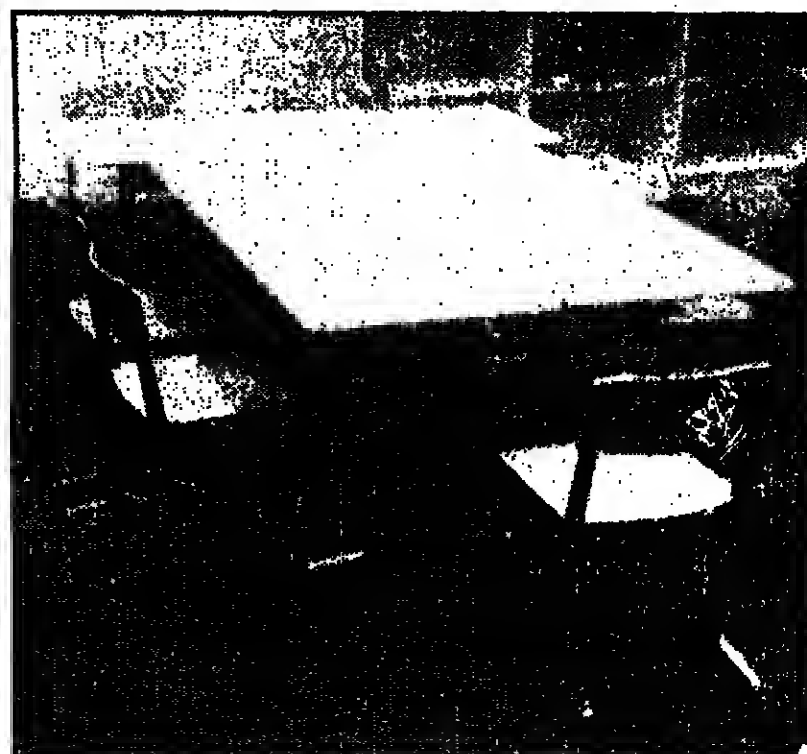
The British Computer Society, whose education board are coordinating the registration of UK delegates, have set up a £2,000 scholarship fund to pay up to half the cost of 25 teachers from the secondary education sector.

The conference aims to bring

together people concerned with many possible roles of computers in education, including the use of computers aid to the national difficulties of some countries. Four different sessions will be held: computer papers selected by the programme committee; round table discussions and panel discussions and further information: the Computer Society, 29 St. Place, London W1.

# Furniture and equipment review

National and international standards: compatibility and local requirements. By D. L. Medd—29 • Are resource centres an economic necessity? By Norman Beswick—31 • Booby traps for both the unwary and the cunning. Is furniture and equipment becoming more dangerous? Anna Sproule reports—32 • High density storage system. ILEA field trials lead to waste-saving and flexibility •



Left: tables that are dimensioned to group, that can be set at all round, and are practical to butt accurately to form large flat work surfaces are widely demanded in this country (Cumbrian Education Committee). Centre: Most school tables in Germany have storage at the work-place and are designed for two pupils to sit at one long side only. The dimensions, leg supports, storage, and edge profiles do not meet the needs of grouping (right).

## Variety and standardization

D. L. Medd, directing architect, Department of Education and Science, writes on what is being done to close the gap between school furnishing requirements and economic demands

Nine million children need a lot of school furniture, and about half of them are in new places that have been provided over the last 30 years. How do designers know what to design and manufacturers what to make? Happily, manufacturers' catalogues no longer illustrate what sold yesterday rather than what education wanted today or is likely to want tomorrow. Then clerks and supplies officers knew more about the code numbers and the prices than about what teachers wanted, and the few interested designers fitted with special orders, some of which pointed the way ahead, but were not recognized as so doing by industry which had no effective connection with education or the teaching profession.

### Influence of consortia

There are many influences that have led to the more healthy situation of today. These are the persistence of a few furniture designers who have specialized in their subject, the organization of many local education authorities into consortia for furniture design and supply, the work associated with British Stand-

ards for school furniture and the research work which they have promoted. The most immediate effect of these consortia has been to change the relationship between the customers and the manufacturer.

Designers in consortia having analysed and designed for the needs of their educational colleagues can present well organized and long-term orders to industry, whose manufacturing and sales efforts can then serve known needs rather than depend on an outdated catalogue or small special orders. Thus the design profession is being more effectively used, and industry is being given the opportunity of serving the increasing complex variety demanded by modern education. The forms of collaboration between I.A.A.S. consortia and industry are several and include the experience that can be offered by departments of central government (PSA Supplies Division and Department of Education and Science).

The large programmes, together with the customer and manufacturing units, which are becoming both larger in size and smaller in number, could threaten individual initiative and experiment of the kind that was seen in the 1950s and early 1960s. Provided, this threat is always in mind, ways can be found to avoid present designs becoming a new routine, so that gradually and imperceptibly educational developments again widen the gap between what is needed and what the establishment provides.

The constant tussle in which designer and maker must engage is over the need for change and variety prompted by education and the need for standardization, prompted by economics and manufacturing processes. Designers have their imagination stimulated by this conflict. Every year ways are found of assembling a relatively small range of manufactured components into different finished products that serve developing and changing education needs. The gradual evolution of school seating is three, rather than five years, in one of the recent fascinating chal-

lenges. However, this versatile use of standard components depends on a discipline of dimension, colour and specification, on which subjects the British Standards Institution can have an important influence.

### British Standards

There is little doubt that a British Standard is the most effective means by which the experience and needs of purchasers, users, designers and manufacturers can be made widely available and fed into the mainstream of their activities. The experience of this country in the creation and use of national standards for school furniture far outstrips that of any other country. As this activity now has entered the international forum it may be useful to summarize our experience and note the changes in attitude.

The first standards were published in 1950 (BS/MOE 11-22). These 12 standards, each concerned with a particular type of furniture, had the laudable aim of ensuring that industry could meet users' needs when the school building programme was large and resources scarce. The lead given by these standards was both welcome and influential because experience was available, however, as experience in the 1950s accumulated, the basis of the standards was challenged.

First, standards specified full constructional details of specific designs and no guidance was given on the distribution of the seven heights of chair and sitting height tables. It is interesting to note that the elaborately contoured profiles of their seats got backs were specified in detail as such moulded shapes were considered, posturally correct. However three variants of increasing simplicity were offered to appease those who doubted the wisdom of attempting to fix a child's posture by the moulding of the seat. This standard established the once familiar 36in by 18in table sizes, and 20in by 17in and 40in by 17in table/desk sizes, as well as the 6in difference for storage purposes between knee

Continued overleaf



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Continued from previous page

have been in hiding for years. They are seen as participating in the expansion of industry, dinner parties, child rearing and the Great Exhibition. Phrases like "infant mortality", "speculation and investments", "vigour and enterprise of the age", "the average Englishman with a sense of optimism and a deeply rooted belief in progress" are used as explanations of the character of the middle class. The only part of this section where the pictures and words are complementary is the one on the Great Exhibition. Here the words are nearly all contemporary quotes genuinely descriptive rather than assertive.

It is difficult not to suspect that this set is meant to be used solely as a revision summary for CSE or O level. What is any student going to think when told that the same average Englishman "was not aware of the social and economic changes that were taking place around him"? Only 30 notetakers eager for examination neatness of thought could accept this sort of verbiage without incomprehension or bewilderment. The incomprehension of the average Englishman looking puzzled, or at least unsure, they see a fairly immature and un-changed Victorian.

Genre paintings of the bourgeoisie at home provide at least reasonable illustration of themes in the third section of part one. But there are too few pictures of working-class people doing things other than being impoverished for the first part of part two. To start with there is some confusion as to who they are: "slum dwellers", "working people", "the urban poor", "labourers", "the labouring poor". The listener is merely told that they are a social problem.

The housing conditions of those who had recently arrived in towns were horrible and produce good

picture material, but the people themselves are all pathetic or faceless, apart from a collar and a rural family about to depart. There is no sign of the respectable artisan as frequently referred to in the fiction of the time. Since he was not a myth he should be mentioned in a survey, however sketchy. In general there is no sign of working-class activities; their appalling conditions are only relieved, if this act is to be believed, by philanthropy.

The section on ideas and thought suffers from the same attempt at comprehensiveness without an overall balance. A series of boarded heads is supposed to convey something of the thought their owners produced. Complicated ideas are reduced to descriptive incomprehensible to the student and often inaccurate. Anyone listening has to know the subject to understand the terms used and the relevance of the pictures.

The pictures, used in short batches, could be useful as illustrations, but then the difference between this and a textbook is no longer apparent. The latter is certainly more flexible. The set reaches the height of absurdity in the next section. The Irish question is seen as four debates were in a field and a debate in the House of Lords. Impressionism is shown as a Victorian and a Diogenes in a cartoon; the Boer War and the map coloured red.

In sum, the set could be used for a particularly desperate revision class, preferably without the commentary. To reduce its value further the narrator's voice is dull standard BBC with a peculiar inflexion at the end of the sentences. Quotes are read as if we were still in the days before they had discovered that there were working-class actors. Most students are well used to the combination of words and still pictures—they can see it every day on the television news—and can expect a more productive use of the technique. It is a pity to waste some excellent and unusual pictures on rewriting the O level syllabus in 30 minutes. Buy it for the pictures, if you can afford to, but not for the text.

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Continued from previous page

clearance end top surface, which was the cause of so much bad posture.

Any perfection intended by those responsible for chair profiles was immediately compromised by the table/desk with which they had to be used. In the early 1950s it was easy to see that such furniture was compromising the trends that new schools were being designed to serve. More educationally suitable furniture had to be designed and especially made in small quantities and at greater cost. In 1953 a new committee was set up at the British Standards Institution with co-operating organizations that included the Ministry of Education and Health, the Furniture Development Council, School Furniture Manufacturers' Association and the London County Council.

Current research on the size of the school population was used, and new research was commissioned, whose results were tested

in extensive lifting trials in schools. This led initially to BS 2639:1955 (school dining tables and chairs). This was important because a scheme whereby dining and canteen furniture was separately supplied and financed through the Ministry of Works was costing. Thus dining and working area furniture could be, as they should, related or combined.

In 1959 BS 3030 parts one to five were published. These established the five heights that are still familiar, and the basic table plan size of 44in by 22in. Log clearance zones were established, as was guidance on the distribution of furniture size to stature and age.

Initial resistance to such radical changes soon gave way to enthusiastic acceptance. This acceptance was due not only to the scientific basis on which the dimensions were based, but to the principle of standardizing the data for design rather than the design themselves, as had been done in BS/MOE 11-

22. In this way standards were safeguarded rather than created, so that designers and manufacturers could seek ways of complying that best suited them. This principle encouraged many designs that offered new storage solutions and increased versatility for grouping in use. Sizes were specified in ergonomically based functional dimensions, strength in performance tests, and quality by the attributes of materials and workmanship.

The revision of BS 3030 part three (pupils' chairs and tables) in 1972 was prompted by the needs to provide a nursery size and to convert to metric units; and the advisability of lowering the largest chair to conform to office standards. This also permitted a wider stature range to be seated comfortably.

### An international standard

In 1972 the range of standard heights was increased from five to six with the new nursery height tacked on rather than properly influencing the succeeding heights. Thus it is not as useful as it should be. At the same time the International Standards Organization decided to prepare standards for school furniture, the first being functional dimensions for tables and chairs. In spite of requests from other countries, and the United Kingdom's unparalleled experience of the design and use of standards, the ISO's committees on international work presented the United Kingdom from taking the secretariat, which is now being provided by Germany.

In spite of agreement that an international standard should offer a framework of incremental sizes from which nations can select for their own requirements (making a clear distinction between those dimensions that are essential for international compatibility and those that may vary locally), there is always the danger that the customs of the industrial country will dominate. There is less difficulty on heights, which are governed by anthropometry and ergonomics, than on plan sizes which are governed to a greater degree by educational practice and economic circumstances.



The use of 1/20 scale models (by PEL Ltd) is a valuable way of bringing teachers, advisers and designers together to study the most effective use of space and the composition of a furniture schedule to meet particular needs.

Experience and current research in the United Kingdom by the Furniture Industry Research Association, and by I.O.A. organizations, has led to a much clearer picture of the mobility and variety of working positions assumed by children of different ages in schools. This picture challenges the use of the same fitting criteria for all ages of children, and the content of furniture schedules that have been common. This work will certainly enable industry to meet the needs of school pupils more economically than by the seven heights proposed in 1950, and probably more so than the six heights now specified. An international standard must be designed to serve different educational practices and economic circumstances as effectively as it does different features of children. The fact that to some movement is a misunderstanding and to others an educational necessity symbolizes the challenge and the opportunity in an international committee face. In any event it is promoting thinking and work that will narrow the gap between the standards that the establishment design and the needs

and practices of those working in schools. It is interesting to note that the 1950 standards specified details for 12 types of furniture that included designs for a variety of special subjects, scientific, technical, and so on. It has been a long time since we have seen a similar variety of special subjects, particularly when furniture is designed to meet the particular needs of local specialist advisers. Moreover, the trend both in education and design has been towards the use of basic furniture types that are designed to be educational versatile by the variety of use and attachments which they incorporate.

It is likely, therefore, that the needs for a comprehensive range of sitting and standing heights, surfaces with perhaps in-built storage, some basic storage standards, in the 1970s cover a wide variety of educational activities and specialist subject standards did in the 1950s.

## Luxury or economic necessity?

NORMAN BESWICK on resource centres

A few years ago, a resource centre was an expensive luxury which only a few wealthy schools could afford—or so the story ran. Then schools which were certainly not wealthy began scheming and saving and found, not only that they could devise resource centres without an outlay of thousands, but that there were positive financial advantages. Nowadays, some schools and local authorities may even consider a resource centre is a measure of economy.

A school in Shalford said: "As a first step, we thought let's at least make an index of all the equipment and resources we have at the present. And we found that sometimes three separate departments had a copy of the same film-strip and had used it perhaps once each during the year. We could have bought other materials with the same money and upset nobody. When we coordinated things better we were quite surprised what we were able to do."

A school in the Midlands found that sets of slides and photographs held by the science departments, showing crystals and amoebae and plants and physical structures and even machinery were very exciting to the art department; who used them for visual stimuli and worked patterns and shapes. "With a little inter-departmental cooperation we were well away—and it saved money, too!"

And on impoverished but emboldened primary school head said: "Three days you people call it a resource centre, but we've always done it. We couldn't afford to do anything else."

In the light of such statements and the present "no growth" situation it may therefore be necessary to think again about the way we deploy what we already have: resources, equipment, finance, use of personnel and available space. We may have to look at what we can share between schools, consider again the role of the local teachers' centre, re-examine how support services such as the public library, the museums, the archive unit and even the council's reprographic equipment can integrate their offerings to better effect; not to mention re-thinking the community functions of polytechnics and universities. And such a review need not only be economically beneficial.

It is not just a question of avoiding unnecessary duplication, although this advantage is itself considerable. Even at a simple level, one item can often have more uses than we first imagined. A typical example is the so-called "teaching aid", which when it is not being used to edify a lesson is all too often forgotten. We have allowed ourselves to be misled by language; a teaching aid can also be a learning aid, and for that matter, enjoyed in its own right. Made available (with necessary safeguards) to a library resource centre, it enriches the stock and service at no greater expense. A simple advance booking system makes it easily retrievable for its original purpose. Moreover, by adding it to the collection, we make possible inquiry that does not result in simple copying out of books. A person using a pictorial

resource has in his own verbalization—in other words he has to think.

This may occasionally spoil the surprise impact of a particular item in class use but few teachers of today's sophisticated pupils rely on audio-visual materials for gimmicky and stunts. They see it much better done on television. We can make a simple budget stretch further by letting our purchases do several jobs, but this policy means we may have to do more thinking about organization. If pupils in inquiry learning are going to use audio-visual items, they will need viewing and listening equipment, and usually some means of recording, whether it be a report, whether of these requirements presents insuperable obstacles. Simple slide viewers (especially those using reflected light) are cheap and sturdy, and easily operated cassette players are not impossibly dear.

Surveys show that audio-visual equipment in most schools is used in class presentation only for a proportion of the school year, on under-use which can be minimized by making the simpler and more easily portable equipment available for coordinated use in the library resource centre at other times.

The addition of such equipment allows the teaching staff to plan more varied teaching and learning programmes. They can also involve the pupil in active participation which is so important a part of contemporary educational objectives. Much has been said and written about the necessary preparation for such activities, and in particular about the importance of teachers producing their own supporting materials. Some schools harness their inability to afford the reprographic, audio-recording and photographic equipment thought necessary for a career walk round reveals a wealth of such equipment under-used in departmental cupboards, which (after the inevitable battles) could effectively be combined into a resources production unit for the entire school. Much can be achieved by a systematic (and sometimes fairly ruthless) scrutiny of existing resources. This may even include the typing and duplicating resources of the school office—and a hard look at the head's need for secretarial assistance.

The deputy head, or whoever has overall care of curriculum development, will find a coordinated production unit a powerful agent for the stimulation of staff thinking and innovation as teachers who are producing teaching units are creatively involved in course planning.

The coordinated equipment need not be elaborate, and will almost always be present in the school already. It need not even be kept in one place, although there are advantages to a single-building school in one room which can be supervised by one ancillary.

Also worth exploring is the equipment at local teachers' centres. Local authorities have found by locating production equipment and personnel at such places expensive work can be done more economically and first-class materials can be shared among several schools.

Meanwhile, the school library resource centre will be collecting many items which do not need equipment for their use but which greatly extend the scope of the collection: press cuttings, colour supplements, photographs, maps, models, specimens, artefacts and, of course, worksheets guiding their use. Any such department needs supervision, not simply because of damage, misuse, vandalism or theft, nor because extra audio-visual items and equipment may be added to these materials, but once again because we want to maximize the effectiveness of the provision and make sure that everyone can find it.

Once again we come up against the under-use of resources. A school library is only available during a teacher's library-free time, or when materials and equipment are looked up in a departmental or library cupboard because no one is around to get it. So in a "no-growth" situation we have again the disposition of available personnel for the fuller use of available materials.

The minimum requirement is simply something there to keep an eye upon. Some schools have managed extraordinarily well with part-time volunteers, and others have found ways of employing senior pupils in a way that benefited them educationally as well as socially.

Some are more fortunate than others, and local mores and regulations about the use of ancillaries, and unpaid labour vary. However, where schools are in a position to rework their use of ancillaries and their deployment of laboratory, secretarial and other assistants, surprisingly successful readjustments sometimes result. Some tasks can be performed in other settings. Off-air recording, for instance, can be combined with supervision of borrowing routine.

Professional staffing is needed to make the best educational use of resources. Some schools have supplemented the teacher-librarian's free periods by drafting other teachers for library resource centre supervision at other times. This at least helps teachers in contact with the pupils' point of use, but their insight and understanding varies.

Alternatively timetable adjustments can be made to bring the teacher-librarian into the resource centre more often (at Coddall Comprehensive School this became three-quarters of the week) and drafts can be limited to a few particularly suitable individuals. Ideally, of course, there would be a full-time school librarian in the area, but in "no growth" times this is not possible immediately. Some schools, however, have adjusted ancillary quotas to provide themselves with a qualified librarian reported that the results in the quality of advice on curriculum materials alone repaid the outlay. (It should be remembered that limiting an appointment to a limited number of applicants who can afford to apply.)

Current professional training programmes will lead to a significant increase in the number of librarians who also have a recognized teaching qualification, which would help those looking for well-planned but increasingly individualized education. These professionals must be effectively employed to make fullest use of their particular contribution.

Careful organization of resources is an essential feature of economic management: the haphazard misser-faire methods of the past don't measure up to the needs of economy years. As we have seen, this can lead to a review not only of currently recognized objectives but of objectives previously thought unattainable. Nowhere is this more urgent than in the way a head disburges the school's own finances. Traditional patterns, particularly of departmental autonomy, may need considerable readjustment, especially as it becomes recognized that materials and equipment can have interdisciplinary relevance. Money spent "through" a resources organization, which serves all-comers equally, is seen to be a fair means of sharing to straitened times.

A school which can demonstrate to its L.O.E. a thorough and systematic analysis of what it has, what it does, what it can plan to do within present constraints, and what it can hope to do with help, is more likely to get sympathetic response. The basis will have been laid for more economic use of additional provision. Equally, the L.O.E. can plan to spare the time from the other aspects of reorganization) encourage activities which lead both to economy and to educational effectiveness. The example set by the ILEA in fostering resources cooperation between educational establishments, within small local areas, to be able to deserve closer study. The initiatives of the Wiltshire, Somerset and Leicestershire county libraries in the provision of multi-media resource materials to schools could well be followed, particularly the Wiltshire pattern which involves cooperation with other interested agencies. Another example is the coming of the county libraries from the libraries, the museums, the archives, units and the teachers' centres.

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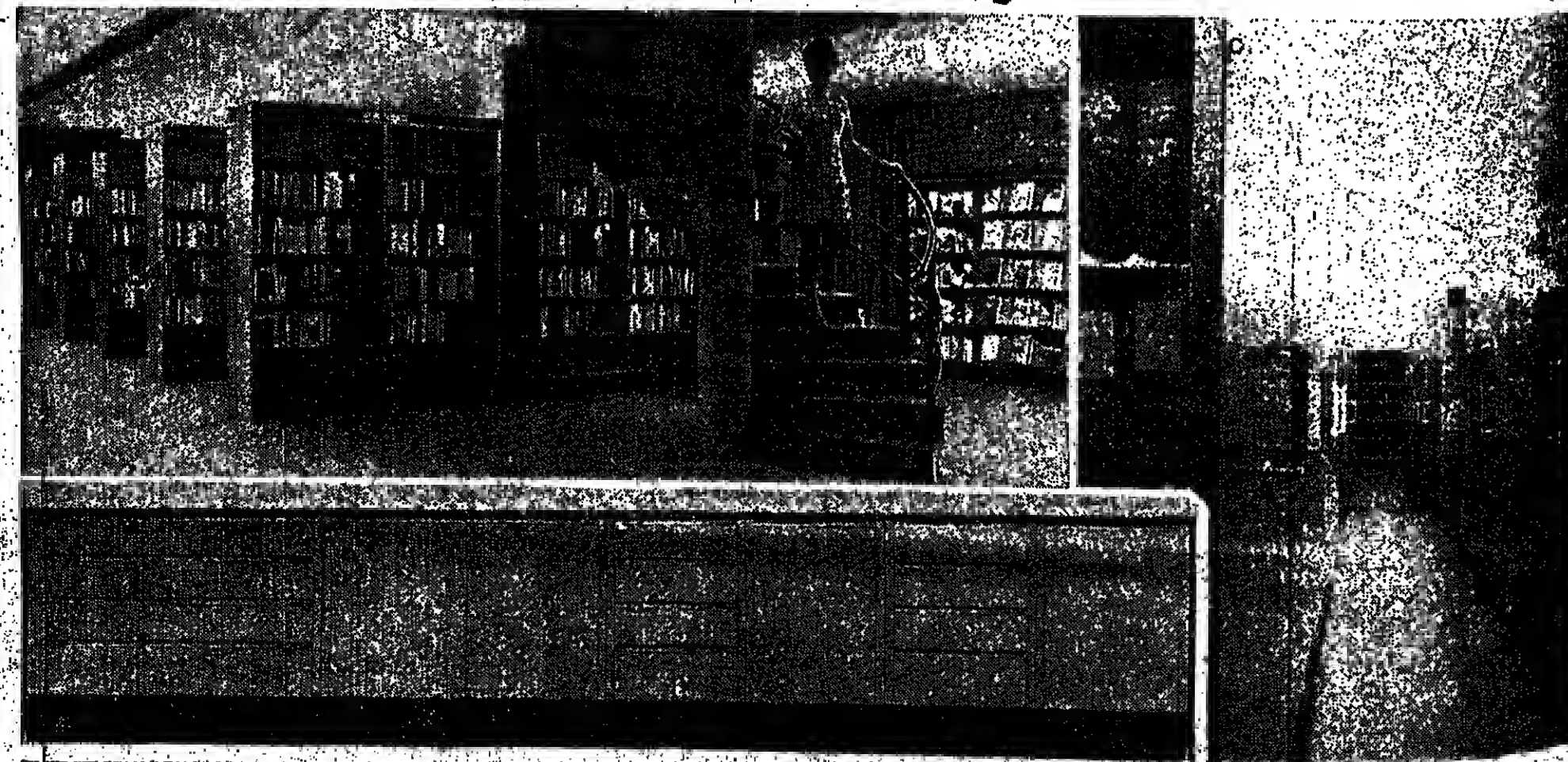
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3. 1992. *Journal of Applied Ecology*, **29**, 1031–1041.







































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## THE QUICK AND THE DEAD

Harold W. Appleton

Educational uses of living organisms: Animal accommodation for schools. 60p. Small mammals. 75p. Schools Council. English Universities Press.

After the Schools' Council publication last year outlining the hazards of keeping small animals in school, I wonder if there are enough schools still brave enough to have animal collections to warrant the production of these books. They are the first two of a series to be prepared at the Centre of Science Education of Chelsea College. They are further towards making it difficult for schools where a few pet rabbits and guinea pigs are kept for the education and enjoyment of the children.

*Animal Accommodation* states that we must ensure that creatures are unaffected by fluctuations in conditions in the classroom and the laboratory. I wonder how this compares with the natural habitat? This book covers the provision of purpose-built accommodation. Schools large enough to command sufficient money, and able to employ a full-time animal technician will welcome the advice given. Layout, design, equipment and methods of controlling environment are all covered thoroughly. Technical detail, bibliographies and reference lists are lavish, and schools able to approach these standards can be proud of their achievement.

*Small Mammals* starts with 20 demanding criteria to be considered when selecting species to be kept in school. Species not recommended are listed and we are left with a choice of rat, mouse, hamster, gerbil, guinea pig and rabbit—all rodents, thus affording little variety. There follows extensive detail of management, breeding and minute technical data. The biology of each species and their uses in school and research are covered. Reference lists and addresses of suppliers are given in appendices.

It is obviously the intention of the authors to protect both pupils and the animals. It seems a pity, however, that every attempt appears to be made to outlaw the innumerable schools—particularly primary schools—where the classroom pet is a useful addition to the children's education.

## THE FUTURE OF HUMAN SOCIETIES

Peter J. Baron

*Biology: Food and People*. By R. Barras. English Universities Press. £3.75. 0 340 17603 2/17604 0. Unibooks £2.25

While professional biologists and teachers of the subject are in general aware of the limitations and problems posed in this volume, it is regrettable that many others have a less than complete understanding. Young scientists in the latter category may well be more important than their elders, in relation to the future of human societies, and teachers must therefore ensure that economic biology has an adequate place in the school curriculum.

Indeed, one might well start this educational venture with the postscript of *Biology: Food and People* which briefly strasses the contributions made by biological science to human welfare, along with the significant role of the biological sciences in the future of the world. The book is a natural environmental problems. In part I, of his work, Robert Barras covers, inevitably and again briefly, human population growth, habitat and man's place in the ecosystem. My feeling is that the pages dealing with ecosystem principles could have been expanded so as to be beneficial to the whole book. After all, like it or lump it, man is an animal and despite his enormous egotism nothing has so far demonstrated that this species is not ultimately subject to the laws of nature. This point is, however, emphasized in chapter 16 which deals with population control.

The student is subsequently introduced to concepts important in increasing primary production: basic ideas such as soil structure, mineral deficiency diseases, use of fertilizers and crop rotation first of

*Techniques of Biological Preparation*. By J. Simpkins. Blackie. £2.50. 0 216 89767 X.

I hope that the picture on the cover—a pigeon larva if loosely wrapped in string—will not create the wrong impression; closer inspection reveals that it is not undergoing a refined form of torture, but is a museum specimen in the last stages of mummification. The book was written for the City and Guilds Science Laboratory Technicians' Advanced Course, but its use in school for teachers as well as their technicians will be obvious.

There are two sections: Preparation of Whole Specimens, and Preparation of Parts of Specimens. Each is divided into a number of chapters and there is a good index. Liquid mounts in museum jars, preservation of seaweeds and land plants, setting and mounting insects, wax impregnation and resin embedding are described in the first section. There is also a chapter on microscopic whole mounts—often needed in school but difficult to prepare unless the method is known. Finally, tannin and the preparation of casts and moulds completes this part of the book. The second section describes in detail the method of preparing specimens with injected blood systems. It explains resin injected corrosion casting and the preparation and mounting of skeletons. This latter process is difficult unless the method is known and the method is known. Transparency preparations (actual specimens, not OF transparencies) and histological techniques complete the book. The last chapter will prove invaluable when teaching A level biology as most of the methods described are those used in school and research—reference lists and addresses of suppliers are given in appendices.

Given to pupils during the final year, or perhaps the final term of a biology course would probably be the most useful way of employing this book. It is not expensive and good candidates might well be encouraged to buy their own copy in these days of educational austerity.

*Concise Biology*. By A. E. Pridmore. John Murray. £1.00. 0 7195 29411 1.

This book is described as containing "in easily assimilated form the topics required for O level examination in Biology". It is a new and fully revised version of an earlier work by the same author. It is perhaps a slight disadvantage that the format is one made popular a few years ago, and copied, not always so efficiently, by many authors since. It cannot be considered a textbook but rather a condensation, for in 150 pages the whole range of the syllabus is laid out in brief notes and diagrams. It can be used to supplement teaching, perhaps in place of the notebook. At the end is an index which is in the form of a glossary. The book is divided into 11 sections, the final chapter being mainly a summary of the previous 10. There is hardly a page which does not contain at least one diagram, neatly and clearly drawn and well labelled. Specially selected lists of characteristics and basic facts which a candidate needs to learn are distinguished by a background shading in pale grey. The use of schematic diagrams which can be fairly easily learnt, rather than linear notes, are used to explain photosynthesis, gene action and protein synthesis, immunisation and nitrogenous excretion. Nitrogen and carbon cycles are well illustrated in this manner. Brief instructions are given for performing the many traditional experiments. I am surprised to find no reference to blood groups in an otherwise very complete chapter.

An interesting section of the "Response to stimuli" chapter contains references in learning and memory. Given to pupils during the final year, or perhaps the final term of a biology course would probably be the most useful way of employing this book. It is not expensive and good candidates might well be encouraged to buy their own copy in these days of educational austerity.

Given to pupils during the final year, or perhaps the final term of a biology course would probably be the most useful way of employing this book. It is not expensive and good candidates might well be encouraged to buy their own copy in these days of educational austerity.

## WEATHERING WELL

John Gribbin

*Everyday Meteorology*. By A. Austin Miller and M. Parry. Hutchinson. £4.95. 0 09 121910 8.

This is the welcome "completely revised" second edition of what has become something of a standard text. First published 17 years ago, *Everyday Meteorology* has been through seven printings before this revision, so one could hardly accuse the publishers and the surviving author of undue haste; certainly the progress made since 1958 fully justifies a new edition.

Some of the most immediately noticeable changes are in the presentation of diagrams (weather maps now in the style of the familiar Daily Weather Report maps, for example) and in the units, which are now metric. A touch of nostalgia

## SHOCK TACTICS

*Biology of the Future*. By Eckehard Minck. Collins £2.00. 0 00 100141 8.

What is biology? How is it conducted and where is it going? These seem to be the questions Eckehard Minck is tackling in *Biology of the Future*. The answers come as numerous snippets of information, illustrated by a large number of colour photographs, most of them "superficial" and many poorly captioned.

The text is commendable for covering a great deal of ground, but unsatisfactory for covering it so skimpy. The author, explaining an experiment, often describes the procedure with the minimum of detail or less, and his interpretations of experimental results are too thin to satisfy a thinking reader. However, the latest information is interesting in itself, and the non-scientist

## SOLAR SYSTEM

*Cosmology Note*. Edited by Lewis John. BBC Publications £2.50. 0 2370 2.

Almost any 14-year-old could do a television commentary for one of the Moon missions. That's really a measure of how well the lunar and planetary scientists have put out their branch of astronomy. They have been so successful that they can be forgiven for thinking that astronomy ends at the place Pluto.

Too many astronomy books do foster this impression by being strung on the solar system by week in their accounts of everything else—the stars, galaxies and quasars—where advances have been made. This book is exciting as anything happens to the comparatively narrow band of lunar and planetary astronomy, that something called the "background radiation", discovered nine years ago, is just about the best clue we have to the history of the universe?

Last year the BBC redressed its balance with a series of Radio talks on cosmology which have been published as *Cosmology 55*. The authors include Fred Bondi, who helped introduce a steady state theory and here contributes a superb chapter explaining how a simple thing like the darkness of the night sky is an important clue to the structure of the universe. Others include Sir Fred Hoyle, who has been subjecting to steady state cosmology to dramatic tests, and inevitably much of the book is concerned with the work of astronomers' views on the possibility of this. Roger Penrose (writing about black holes) and Martin Rees (the Hoyle's Young Successor at Cambridge).

Between them they provide a view of the most authoritative view of current thinking about the universe as well as the most recent. None of the tricky questions is skirted (what preceded the universe? what is inside a black hole?), yet the authors manage to avoid most of the flights of fancy that sometimes mar accounts of cosmology. Even so, none of the excitement is missing.

Edward Phillips

# NEW SCIENCE

JOHN MURRAY

## BIOLOGY

*Recently published*  
*Concise Biology A E Pridmore*  
This remarkably low-priced book provides a clear, well-illustrated summary of O level biology work, including key experiments on each topic. Three characteristics distinguish it from others in the field: intensive study of the latest syllabuses to identify the common ground between them, isolation and highlighting of the essentials, and the low price. £1.00

*Bacteriology* John Humphries  
Dealing with elementary bacteriological techniques in a simple and highly visual manner, this book may be used with wide range of courses including O level, CSE, City and Guilds and medical laboratory technicians.  
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*The School Science Review* £1.85

*The Rat as a Small Mammal 3rd Edition* H G O Rowett  
This new edition of a standard text for A level and first degree students is revised throughout. Some basic biochemistry has been added and the sections on endocrinology and neurophysiology rewritten. £1.20

*Problems in Animal Physiology* M K Sands  
Companion to the well known *Problems in Plant Physiology*, this book provides a source of data which could be obtained first-hand by A level students. The problems based on the data require skills of analysis, evaluation and hypothesis formation which may be applied to the student's own experimental results. The Teachers' Edition gives the problems in full and discusses likely answers. *Publication: September*  
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drawings prepared by the authors. Among the syllabuses covered are the Cambridge Overseas, London (O levels and UK), JMB and Oxford and all of which deal extensively with aspects of disease, the course and cure of disease and population dynamics. *Publication: June* £2.15

*Success in Nutrition* Magnus Pyke  
One of a series of self-explanatory courses, this book is comprehensive enough to meet the needs of beginners, examination candidates and anyone involved in catering, dietetics, welfare, food manufacture or any other profession where a basic knowledge of nutrition is necessary. Syllabuses covered include O and A level Food and Nutrition and Home Economics and OND and HNC courses in Hotel and Institutional Management. *Publication: June*  
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**'O' Grade Chemistry—**

Essential Facts and Theory

R. A. ROBERTSON

The author's aim is to cover the last two years of the Scottish 'O' Grade syllabus as clearly and concisely as possible. He gives the essential theory backed up by results from experiments—but excludes experimental details to make the text easier to read and revise from. This book may be used as a concise text or in place of the pupils' notes or for revision. For reinforcement there are revision questions at the end of each chapter and a set of data tables (identical to those used in the 'O' Grade examination) is supplied at the end of the book and frequent reference is made to them.

Probable Publication August

Limp £1.30 approx.

**A Concise 'O' Level Chemistry**

T. J. DAVISON

This book aims to cover the 'O' level syllabus as clearly and concisely as possible and it will also be useful for pupils studying a Nuffield-type course since it provides a simple reference book with the emphasis on understanding. It may be used as a normal textbook or, because it is brief, for revision or in place of the pupils' notes. The book is in three parts: the introductory chapters contain all the information and skills the pupil will need to study the metal and non-metal chemistry in the second and third sections. Limp £1.30

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This book is designed to help students cope with examination questions involving calculations. It has been completely revised to meet the needs of modern examinations: each chapter deals with a particular type of calculation, and the student is introduced to the theory, shown some worked examples, and then presented with numerous questions. Answers to odd-numbered questions are given; a leaflet giving the answers to the rest is available from the publisher. Limp £1.40

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Project Director: R. LEWIS

These packs enable the student to carry out, in a simulated environment, investigations which would otherwise be difficult, expensive or time consuming in the laboratory. No knowledge of computing is presupposed, and the only hardware needed is a computer terminal. The programs are already stored in a number of computer libraries; if they are not available a leaflet in each pack explains how to obtain them—free of charge. Each pack contains six copies of the Students' Notes and one copy of the Teachers' Guide.

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(Chemical Reaction Kinetics)

Rhinot allows the student to investigate first and second order reactions; the pack will help him to understand rate constants and the effect of changes in concentration and temperature on reaction rate.

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Linkover has been designed to allow students to plan and execute a programme of experiments so that an accurate genetic map of the simple chromosome of the 'electronic species' can be drawn.

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These further packs will be available this year.

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An Integrated Approach

A. J. YATE

This is a book for the less able 12-16 year old. Because it is vital to capture the reader's interest, many cartoons and photographs have been included. Once his attention has been gained, he is guided through simple experiments and invited to write statements and draw conclusions. The book shows where plastics fit into our world of materials, the various properties of plastics, how the pupil can identify a plastic, and how plastics are made. It can be used as a complete guide, but many sections are left open-ended so that the more enthusiastic pupils can follow up investigations in greater detail.

Limp £1.00

**Patterns in Biology**

DAVID HARRISON

This new and well illustrated book deals with those extremely important topics which form the core of the new 'A' level biology syllabus. Attention is focused on the core topics of cell biology, genetics and evolution. Investigation of the relationships between genetics, evolution and ecology shows how energy interchanges at the cellular level is related to energy flow through the biosphere. The text is well supported by many line drawings, photographs and electron micrographs.

Cloth £10.00 net. Limp £4.75 net

**EMPHASIS ON VECTORS**

David Sturgess

Maths Today. By B. Holland and P. Roes. Harrop Books 1-1 £1.45 each. Teachers Books £2.45 each.

This series of books is a re-write of the Millard Mathematics Experiment texts and is published by Harrop for Midlands Mathematical Experiment Ltd. For any who remember the BBC Television series of a few years ago called Maths Today the title of these books is misleading since the approach is quite different. There is only a brief mention of groups and little evidence of the emphasis on structure, that was a feature of those programmes. These books bear the characteristics of the original texts with the emphasis on vectors, leading to a study of vector geometry as opposed to motion geometry, and more computation and algebraic manipulation than is contained in some modern texts. Several of the chapters have been taken over from the original text and re-written while others contain new material. Each chapter has a good proportion of examples of different kinds.

There are examples 'requiring movement or special apparatus', titled 'activity' examples and the authors make the point that these are essential to the work. Also included are 'recreational' questions which are optional, and the content of some of these, for example, tessellation, is surprising under this heading.

One other characteristic of the MME material was the development of ideas from opportunist materials. There were often long sections of investigation questions asking children to see 'what happened if...?'. Many of these questions

have been included in the new series but in a different form. The instructions are given in several short steps that are extremely precise, even including, in some cases, the form of the answer with a blank left for a word. This approach leaves little or no room for investigation on the part of the children and some of the original situations have been rubbed of interest by very rigid questions.

A set of teacher's books is available containing answers to the questions and brief comments on each section. Even in these inflationary times it is difficult to understand the cost of these books consisting of 75 A5 pages.

As these texts are derived from one of the major mathematics projects of the 1960s the content deserves a much deeper analysis than is possible in a short review. The authors have kept in general to the original scheme and so these books have the faults and virtues of that scheme. In particular the ideas contained in the fourth book show a lack of overall coherence. Many feel, however, that the teaching of mathematics at the secondary stage would benefit at the present time if there were a serious competitor to the SMP texts both in content and approach. The original MME material never achieved the wide following of SMP and this could be because the material was more difficult in nature. It seems a pity that in this needed re-write of the material much of the challenge of the original material both to teacher and pupil has been removed.

Topics From Mathematics: Work-book Mynall 1. By Josephine Moll. Cambridge University Press. £2.80. 0 521 20303 1.

The manual is a teacher's resource book for three of the Topics from

Mathematics series, Circles, Tangents and Solids Models. The pages of the topic books are reproduced with comments for teachers on the side, containing possible answers to a question, suggestions for other activities, discussion questions and references to other activities in the topic book. For each topic book there is also a summary of mathematical content followed by a list of stationary and equipment needed for the pupils, a list of books for reference, and some pages developing the mathematical principles introduced in the book.

The series aims to synthesise the development of ideas from concepts materials and the working of children at their own pace. To achieve this aim the form of the material is somewhere between a pack of cards and a formal text book. It is intended in this way to avoid the sterility of merely moving from one work card to the next and, by the topics of limited scope, to give satisfaction of pursuing a task to a satisfactory end. The topic approach also allows for group work and the associated discussion as well as individual work.

Many secondary mathematics teachers have expressed a wish for material allowing this kind of approach. The original MME material never achieved the wide following of SMP and this could be because the material was more difficult in nature. It seems a pity that in this needed re-write of the material much of the challenge of the original material both to teacher and pupil has been removed.

**IMPECCABLE SCHOLARSHIP**

Dick Tahita

Mathematics and Mathematicians. By P. Dédron and J. Jauré. Book 1. £1.50. Book 2. £1.00. Transworld Student Library.

These volumes are included in the list of set books for the Open University's proposed course on the history of mathematics. A foreword lists the criteria adopted by the course team for their selection of appropriate books. Briefly, these include impeccable scholarship, accessibility at a general level, provision of suitable primary source material, presentation in historical context and a balance in content between mathematics and the people making it. These are exacting criteria and the choice must have been difficult. This work clearly justifies its place as a set book for students taking the course. At the same time it is welcome that the commissioned translation becomes available to other readers.

The books seem intended particularly to meet the criterion of accessibility in that the material is deliberately restricted to elementary mathematics up to the eighteenth century (though this has to be interpreted from the point of view of French school mathematics of the nineteenth century). The first volume presents a chronological account of the development of mathematics, with emphasis on the major figures and with generous quotation from primary sources. The second volume takes a topic approach, covering the development of numbers, algebraic notation, first and second degree problems, Pythagoras' theorem, trigonometry and the three classical Greek construction problems. The text is stimulating and readable, and offers material—particularly from French mathematicians—not easily available elsewhere.

It will be interesting to see what the Open University students make of them. For of course someone who only has a 'general school level' mathematical background is not thereby lacking in more sophisticated historical interests. The chapters on Greek mathematics somehow fail to relate the works of mathematicians to closely related other activities. This account of Renaissance mathematics presents the great names: each apparently with their ready-made problems to be solved and somehow the intellectual ferment, its antecedents and correlates, are not conveyed.

**SEARCHING TESTS**

D. L. B. Hartley

Basic Economics: Objective and Completed Tests. By D. Anderson, M. J. Hill and J. M. Thomas. Murray. 80p. 0 7195 3085 X.

The view that the more effort you put into searching questions, the greater the marking is likely to be, receives support from this book. The answers to 100 pages of searching objective tests are contained in 16 lists of letters of the alphabet printed on one detachable page.

There are 16 tests each containing 30 to 40 questions, and the subjects

include business organization, nationalization, the location of industry, trade unions and current economic problems as well as theoretical principles.

A few questions leave the impression that ability of the kind needed to do well in an intelligence test will be rather more important than a knowledge of economics. The distractors are plausible: any teacher with more than the briefest experience will know that it is quite reasonable to ask a pupil whether interest on the National Debt in one year has been £2 millions, £20,000 millions or an amount between. One completion test starts off: 'Verti-

cal disintegration means...'. I am glad the authors decided to give possibility A. 'Vertical' collapses a tall building. The diagnostic value of these tests shines through. The book would help teachers and students to improve on any first course in economics. The authors are all highly experienced and have examined at 'O' and 'A' levels as well as for school bodies and tested. They have been tried and tested. They are now several books of objective tests on the market. The special feature of this one is that it is devoted to applied and theoretical topics.

**ADVANCED LEVEL ADDITIONS**

Michael Chapple

Force, Matter and Energy. By D. J. Williams. English Universities Press. £2.45. 0 340 12374 5.

Force, Matter and Energy is a new book, a large book, dealing with the mechanics and properties of matter. The author has included numerous helpful diagrams, and where he sets out to explain something he explains it well. The treatments of simple harmonic and circular motions are sound though a little too mathematical and many teachers will welcome the chapter which begins with motion in a resisting medium and leads on to exponential decay and the diminishing density of the earth's atmosphere with increasing height. There are many exercises and problems distributed throughout the text and each chapter closes with questions taken from past papers belonging to all boards except, curiously, the London University School Examinations Department.

The theory of elasticity is developed with some care but with some reference to the elastic properties of real materials—how does aluminium differ from brass and why? How does cast iron differ from mild steel and why? There is nothing about the nature or origin of the elastic properties of polymers such as rubber or polythene. Surface tension and viscosity are topics which show up the author's undoubted talent for reasoned presentation but there is hardly a word about non-Newtonian liquids.

Basic concepts such as force and energy are not introduced with any confidence. We read, for example, on page 105: 'There is a sense in which the laws of conservation of momentum and energy can never be proved by experiment, because we cannot try them in all possible situations. The pity is that the author like many others, seems unaware that it is not possible to try these laws in any situation. The law of conservation of momentum applies to isolated systems only and all that experiment can tell us is whether or

not a particular system is isolated. Similarly, since changes of internal energy are calculated from the observed, the conservation of energy principle is not something we can test.

These things apart, the book is mostly thorough and clear and the three closing chapters which cover forced oscillations, spinning bodies and gyroscopes, and gravitational forces respectively complete a welcome addition to A level literature.

The Interpretation of Graphs in Physics. By I. S. MacPherson and D. R. Jones. Hutchinson Educational. £2.45. 0 09 116751 5.

For too long the emphasis in practical physics examinations has been on testing a student's ability to set up simple apparatus and to make a few measurements, with very little left to encourage weaker students to look critically at problems concerning drawing graphs or calculating errors. In 1973, London University introduced into its A level examination a paper designed to test specifically a candidate's skill in drawing graphs and in discussing his results.

The authors of The Interpretation of Graphs in Physics take as their exercises to help students prepare for this new examination paper. Their aim may be narrow but the task is important and the book which the authors have written is admirably suited to its purpose.

The first three chapters cover the theory of graphs, some hints on drawing graphs and the calculation of errors while the fourth and last chapter consists of 20 detailed exercises. Each exercise relates to a particular experimental situation and in each case there is a graph for the student to draw and half a dozen questions concerning the graph he obtains. A valuable feature of the book is the very full answer section, taking up almost all pages in which the authors set out

in some detail how the different exercises should have been tackled.

With such a good chapter on the assessment of errors, it is disappointing to see hardly any reference to errors among the 20 exercises and many students would have benefited by the inclusion of a few simple questions in the early chapters. Taken as a whole, it is a book that can be strongly recommended.

Advanced Physics Comprehension. By D. P. Newton. Macmillan Educational. 40p. 333 17691 4.

Advanced level physics students who take examinations set by either the Joint Matriculation Board or London University now face a written paper which tests their ability to understand what they read, their capacity to argue beyond what is explicit to what can be properly inferred, and their skill in writing down their ideas in clear English. Advanced Physics Comprehension, by D. P. Newton, is a collection of 22 passages and exercises which 'is intended to help the student to improve his ability to understand, interpret and sometimes criticize information presented in a verbal form'.

The passages used in the book cover a wide and interesting array of subjects: fossil man, the Atlantic ridge, superheated atoms and quasars, and seem, all but three of them, to have been written by the author, although he does not say so. The questions set on the passages are mostly straightforward and only rarely does a student have to employ an idea from physics if he is to answer a question.

The price is very low, and this is a good thing, but the book is very large. It is a great pity that there is not more guidance on how the exercises should be tackled or how the student should assess his own work and progress. It will be a useful book in the hands of any teacher who is prepared to nurture his students' work very closely.

**LOST OPPORTUNITIES IN PHYSICS-WITH-CHEMISTRY**

T. R. Barrass

An Advanced Level Course in Physical Science. By I. Sinclair, D. Abbott and A. Sheppard. Heinemann Educational. £1.65. 0 7175 0695 9.

Nuffield A level Physical Science teaching materials became generally available in 1973 and at about the same time many examination boards introduced new sixth-form syllabuses in this subject. The Nuffield team saw physical science not as a soft-option in physics-with-chemistry, nor solely as an attempt to integrate physics and chemistry, but as essentially a new sixth form subject: the study of the structure and physico-chemical properties of matter and materials. The same objective applies to the examination boards' new syllabuses.

Following the publication of the Nuffield material and the more widespread introduction of physical science into sixth forms it was inevitable that there would appear from the publishers books written specifically for physical science; the present book is one of this number. Unfortunately it is a most disappointing and uneven book which will do little to strengthen the cause of physical science in schools. As a text for a first year sixth course in physics-with-chemistry the chapters on chemical topics can be recommended as sound and very readable; unfortunately the same cannot be said of the physics sections.

The whole book suffers from very poor proof reading and inconsistent use of symbols and abbreviations. These should be corrected if ever a second edition is required. More important are the many errors of content and sources

at confusion in the physics sections particularly, and the many lost opportunities for a real integration of subject matter across the two disciplines. Among the former are incorrect forms of von der Waals equation, false statements concerning different measures of molecular speed and confusing work on potential, field and unit of charge. Lack of integration shows up over the treatment of quantum numbers; these are first met on page 193 during discussion of the Periodic Classification of the Elements (chapter eight) but the need for them is not explained until page 344 in chapter 12 on 'Atomic Structure'. The ordering of energy levels is correctly given on page 194 and an entirely false impression of the same facts is given on page 345. On the credit side may be mentioned the good discussion of coherency and the use of IUPAC nomenclature in chemistry. SI units are used throughout but in the early chapters a too strict adherence to SI leads to such horrors as 3.6ks.

The contents include two chapters on 'Matter and Stoichiometry' which contain a large element of O level revision and other chapters which give a basic coverage of kinetic theory, motion, oscillations and waves, static and current electricity, classification of the elements, types of chemical reactions, equilibrium, and kinetics, atomic structure and radioactivity. Each chapter ends with an experiment section and a set of problems.

As a text for physical science in the Nuffield context the present book has nothing to recommend it; given a long list of corrections and careful teacher explanation it may be useful for a much less ambitious first year sixth course in physics-with-chemistry.

**Science for Mixed Ability Classes****Biology for the Individual**

Donald Reid Philip Booth

This series of eight texts covers key topics in a biology course for 11-13 year old pupils of all abilities. The series, originally designed for a teaching project initiated by the Nuffield Resources for Learning Project, has been validated in 80 secondary schools of all types. Based on the material and ideas of the Nuffield 'O' level Biology and Combined Science courses, the books enable each pupil to proceed at his or her own best rate. Each book may, if desired, be used independently to reinforce a particular topic in an otherwise conventionally organized biology course. Books 2, 6, and 7, are particularly suited to Human Biology and Hygiene Courses.

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Probable Publication August

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**EMPHASIS ON VECTORS**

David Sturges

*Maths Today*. By B. Hall and P. Rees. Harrow. Books 1-3 £1.45 each. Teachers Books £2.45 each.

This series of books is a re-write of the Midland Mathematics Experiment texts and is published by Harrow for Midland Mathematical Experiment Ltd. For any who remember the BBC Television series of a few years ago called Maths Today the title of these books is misleading since the approach is quite different. There is only a brief mention of groups and little evidence of the emphasis on structure, that was a feature of those programmes. These books bear the characteristics of the original texts with the emphasis on vectors, leading to a study of vector geometry as opposed to motion geometry, and more computation and algebraic manipulation than is contained in some modern texts. Several of the chapters have been taken over from the original text and re-written while others contain new material. Each chapter has a good proportion of examples of different kinds. There are examples 'requiring movement or special apparatus', titled 'activity' examples and the authors make the point that these are essential to the work. Also included are 'recreational' questions which are optional, and the content of some of these, for example, tessellation, is surprising under this heading.

One other characteristic of the MME material was the development of ideas from apparatus and materials. There were often long sections of investigation questions asking children to see 'what happened if...?'. Many of these questions have been included in the new series but in a different form. The instructions are given in several short steps that are extremely precise, even including, in some cases, the form of the answer with a blank left for a word. This approach leaves little or no room for investigation on the part of the children and some of the original situations have been robbed of interest by very rigid questions.

A set of teacher's books is available containing answers to the questions and brief comments on each section. Even in these inflationary times it is difficult to understand the cost of these booklets consisting of 75 A5 pages.

As these texts are derived from one of the major mathematics projects of the 1960s the content deserves a much deeper analysis than is possible in a short review. The authors have kept in general to the original scheme and so these books have the faults and virtues of that scheme. In particular the ideas contained in the fourth book show a lack of overall coherence. Many feel, however, that the teaching of mathematics at the secondary stage would benefit of the present time if there were a serious compulsion to the SMP texts both in content and approach. The original MME material never achieved the wide following of SMP and this could be because the material was more diffuse in nature. It seems a pity that in this needed re-write of the material much of the challenge of the original material both to teacher and pupil has been removed.

*Topics From Mathematics: Workshop Manual 1*. By Josephine Muld. Cambridge University Press. £2.80. 0 521 20303 1.

The manual is a teacher's resource book for three of the Topics from Mathematics series, *Circles, Tangents and Solid Models*. The pages of the topic books are reproduced with comments for teachers on the side, containing possible reactions to a question, suggestions for discussion, references to other activities in the topic book. For each topic there is also a summary of the mathematical content followed by a list of stationery and equipment needed for the pupils, a list of books for reference, and some pages devoted to the mathematical principles introduced in the book.

This series aims to synthesize development of ideas from concrete materials and the working of diagrams at their own pace. To achieve this the form of the manual is somewhere between a pack of worksheets and a formal text book as intended in this way to avoid the sterility of merely moving from one work card to the next and by using topics of limited scope, to give satisfaction of pursuing a topic to a satisfactory end. The topic approach also allows for group work and an associated discussion as well as individual work.

Many secondary mathematics teachers have expressed a wish for material allowing this kind of approach although it makes considerable demands on the teacher requiring fine judgment of the moment to interject in a discussion or investigation. There is much in this manual that will help teachers to do this, but possibly not enough help for those in whom this is a new way of working. For the teacher who is already begun to explore alternative ways of working in mathematics, and particularly for those who wish to encourage investigation, this book can be recommended.

**IMPECCABLE SCHOLARSHIP**

Dick Tahta

*Mathematics and Mathematics*. By P. Dardou and J. Lord. Book 1. £1.50. Book 2. £1.00. Transworld Student Library.

These volumes are included in the list of set books for the Open University's proposed course on the history of mathematics. A foreword lists the criteria adopted by the course team for their selection of appropriate books. Briefly, these include: 'impeccable scholarship, accessibility at a general level, provision of suitable primary source material, presentation in historical context and a balance in content between mathematics and the people making it. These are exacting criteria and the choice must have been difficult. This work clearly justifies its place as a set book for students taking the course. At the same time it is welcome that the commissioned translation becomes available to other readers.

The books seem intended particularly to meet the criterion of accessibility in that the material is deliberately restricted to elementary mathematics up to the eighteenth century (though this has to be interpreted from the point of view of French school mathematics of the nineteenth century). The first volume presents a chronological account with emphasis on the major figures and with generous quotation from primary sources. The second volume takes a topic approach covering the development of numbers, algebra, trigonometry and the three classical Greek construction problems. The text is stimulating and readable, and offers material—particularly from French mathematicians—more easily available elsewhere.

It will be interesting to see what the Open University students make of them. For of course someone who only has a 'general school level' mathematical background is not thereby lacking in more sophisticated historical interests. The chapters on Greek mathematics somehow fail to relate the work of mathematicians to closely related other activities. The account of Renaissance mathematics presents the great names: each apparently with their ready-made problems to be solved and somehow the intellectual ferment, its coincidences and correlates, are not conveyed.

The scholarship is impeccable enough but it takes no risks; the history of mathematics still needs to be caught in the attention of the general reader. Like so many books of this sort the attempt to place mathematicians in a historical context will often mean the loss of the high-sounding language of mathematical discovery. A single-sentence paragraph—and there are far too many of these—followed by a paragraph of the following: 'Desargues, followed by Pascal and later La Hire, laid the foundations of projective geometry. "Robert of Chester lived in Spain and is mentioned as having been in the domain at Pampuna in 1145. "Ploce, himself a good mathematician, who took a serious interest in the theory of perspective died on 13th October, 1425."

It is a pleasure to turn from this to the deeply interesting and liberally quoted words of the mathematicians themselves. Perhaps more adequate language of ideas and personalities is to be found in the Open University graduates of the Open University course in which case these books will have served their well.

**ADVANCED LEVEL ADDITIONS**

Michael Chapple

*Force, Matter and Energy*. By P. J. Williams. English Universities Press. £2.45. 0 340 12374 5.

*Force, Matter and Energy* is a new book, a large book, dealing with the mechanics and properties of matter. The author has included numerous helpful diagrams, and where he sets out to explain something he explains it well. The treatments of simple harmonic and circular motion are sound though a little too mathematical and many teachers will welcome the chapter which begins with motion in a resisting medium and leads on to exponential decay and the diminishing density of the earth's atmosphere with increasing height. There are many exercises and problems distributed throughout the text and each chapter closes with questions taken from past papers belonging to all boards except, curiously, the London University School Examinations Department.

The theory of elasticity is developed with some care but with scant reference to the elastic properties of real materials—how does aluminium differ from brass and why? How does cast iron differ from mild steel and why? There is nothing about the nature or origin of the elastic properties of polymers such as rubber or polythene. Surface tension and viscosity are topics which show up the author's undoubted talent for reasoned presentation but there is hardly a word about non-Newtonian liquids.

Basic concepts such as force and energy are not introduced with any confidence. We read, for example, on page 105: 'There is a sense in which the laws of conservation of momentum and energy can never be proved by experiment, because we cannot try them in all possible situations.' The pity is that the author like many others, seems unaware that it is not possible to 'try' these laws in any situation. The law of conservation of momentum applies in isolated systems only and all that an experiment can tell us is whether or

not a particular system is isolated. Similarly, since changes of internal energy are calculated from the assumption that energy is conserved, the conservation of energy principle is not something we can test.

These things apart, the book is mostly thorough and clear and the three closing chapters which cover forced oscillations, spinning bodies and gyroscopes, and gravitational forces respectively complete a welcome addition to a level literature.

*The Interpretation of Graphs in Physics*. By I. S. MacPherson and R. Jones. Hutchinson Educational. £2.45. 0 09 116751 5.

For too long the emphasis in practical physics examinations has been on testing a student's ability to set up simple apparatus and to make a few measurements, with very little left to encourage weaker students to look critically at problems concerning drawing graphs or calculating errors. In 1973, London University introduced into its A level examination a paper designed to test specifically a candidate's skill in drawing graphs and in discussing his results.

The authors of *The Interpretation of Graphs in Physics* take as their starting point the need for a set of notes to help students prepare for this new examination paper. Their aim may be narrow but the task is important and the book which the authors have written is admirably suited to its purpose.

The first three chapters cover the theory of graphs, some hints on drawing graphs and the calculation of errors while the fourth and last chapter consists of 20 detailed exercises. Each exercise relates to a particular experimental situation and in each case there is a graph for the student to draw and half a dozen questions concerning the graph he obtains. A valuable feature of the book is the very full answer section, taking up almost half of the book, in which the authors set out

in some detail how the different exercises should have been tackled.

With such a good chapter on the assessment of errors, it is disappointing to see hardly any exercises in errors among the 20 exercises and many students will have been headed by the inclusion of a few simple questions in the early chapters. Taken as a whole it is a book that can be strongly recommended.

*Advanced Physics Comprehension*. By D. P. Newton. Macmillan Educational. 40p. 333 17694 4.

Advanced level physics students who take examinations set by either the Joint Matriculation Board or London University now face a written paper which tests their ability to understand what they read, their capacity to argue beyond what is explicit to what can be properly inferred, and their skill in writing down their ideas in clear English. *Advanced Physics Comprehension*, by D. P. Newton, is a collection of 22 passages and exercises which 'is intended to help the student to improve his ability to understand, interpret and sometimes criticise information presented in a verbal form'.

The passages used in the book cover a wide and interesting array of subjects: fossil man, the Atlantic ridge, superheavy atoms and quasars, and seem, all but three of them, to have been written by the author, although he does not say so. The questions set on the passages are mostly straightforward and only rarely does a student have to employ an idea from physics if he is to answer a question.

The price is very low, and this is a good thing, but the book is very here. It is a great pity that there is not more guidance on how the exercises should be tackled or how the student should assess his own work and progress. It will be a useful book in the hands of any teacher who is prepared to mark his students' work very closely.

**LOST OPPORTUNITIES IN PHYSICS-WITH-CHEMISTRY**

T. R. Barrass

*An Advanced Level Course in Physical Science*. By I. Sinclair, D. Abbott and A. Shedd. Hoddon Educational. £1.65. 0 7175 0695 9.

Nuffield A Level Physical Science teaching materials became generally available in 1973 and at about the same time many examination boards introduced new sixth-form syllabuses in this subject. The Nuffield team saw physical science not as a soft-option in physics-with-chemistry, nor solely as an attempt to integrate physics and chemistry, but as essentially a new sixth form subject: the study of the structure and physical-chemical properties of matter and materials. The same objective applies to the examination boards' new syllabuses.

Following the publication of the Nuffield material and the more widespread introduction of physical science into sixth forms it was inevitable that there would appear from the publishers books written specifically for physical science; the present book is one of this number. Unfortunately it is a most disappointing and uneven book which will do little to strengthen the cause of physical science in schools. As a text for a first year sixth course in physics-with-chemistry the chapters on chemical topics can be recommended as sound and very readable; unfortunately the same cannot be said of the physics sections.

The whole book suffers from very poor proof reading and inconsistencies in symbols and abbreviations. These should be corrected if ever a second edition is required. More important are the many errors of content and sources

of confusion in the physics sections particularly, and the many lost opportunities for a real integration of subject matter across the two disciplines. Among the former are incorrect forms of van der Waals equation, false statements concerning different measures of molecular speed and confusing work on potential, field and unit of charge. Lack of integration shows up over the treatment of quantum numbers; these are first met on page 193 during discussion of the Periodic Classification of the Elements (chapter eight) but the need for them is not explained until page 344 in chapter 12 on 'Atomic Structure'. The ordering of energy levels is correctly given on page 194 and an entirely false impression of the same facts is given on page 345. On the credit side may be mentioned the good discussion of interference and the use of IUPAC nomenclature in chemistry. SI units are used throughout but in the early chapters a too strict adherence to SI leads to such horrors as 1.65s.

The contents include two chapters on 'Matter and Structure' which contain a large amount of O level revision and other chapters which give a basic coverage of kinetic theory, motion, oscillations and waves, static and current electricity, classification of the elements, types of chemical reactions, equilibria, and kinetics, atomic structure and radioactivity. Each chapter ends with an experiment section and a set of problems. As a text for physical science the Nuffield context the present book has nothing to recommend it; given a long list of corrections and careful teacher explanation it may be useful for a much less ambitious first year sixth course in physics-with-chemistry.

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**MERTON**

**EDUCATION COMMISSION**  
**KOWAN HIGH SCHOOL**  
**TEACHERS**

Rawson Road, London  
Headmistress: Mrs  
Number on Roll: 100

Required for September  
1968: 15-18  
school, a FIFTH GRADE  
level and to charge  
of Secondary Science  
teaching. This is  
a suitable application  
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Application forms  
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**REDBRIDGE**  
London Borough of  
**KING'S WOOD SCHOOL**  
Hitchin Road, Harlow,  
Essex  
Head: J. I. Westbrook  
Tel: 4791

Required September  
in favour of the S.E.  
of the S.E. of the  
appointment in the  
for one year. The  
established as a  
School since 1976.  
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develop the pupils  
A willingness to  
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Assistance with  
and resettlement ex-  
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Applications to the  
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Assistance with  
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Application form  
available at the Sch  
HILF COUNTY  
SCHOOL

Frontline Road, S  
1011; 7291

Head, F. C. Young

Inaugured in Sept  
MISTERS (Sc  
PH.D.) BILLY  
level and also a  
experience learning  
the school  
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Assistance with  
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Application form  
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**SHEFFIELD :**  
**EDUCATION COMMISSION**  
**PARK HOUSE SCHOOL**  
Bawtry Road, Sheffield  
1A 11 to 16 comp.  
Required for Sept.  
**TEACHER for PHY.**  
**COMBINED SCIENCE**  
S.S. class.  
**EARL MARSHAL C.**  
Earl Marshal Road  
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**SOMERSET**  
SECONDARY  
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in Math. and P.E. combined, on separate  
For September, 1971  
BIOLOGIST, Private  
experience of teaching  
to be second to a  
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 Headmaster at the  
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**SURREY**  
**EPSON COLLEGE**  
 Required for English  
 January 1976. Well  
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Further particulars  
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# THE CITY OF Birmingham EDUCATION DEPARTMENT SECONDARY EDUCATION VACANCIES FOR SEPTEMBER 1975

Applications are invited from experienced teachers and from students completing teacher training this year.

There are two main ways of appointment. Applicants may opt for appointment to an individual vacancy in a Secondary School in the new authority and a list of such vacancies is given below. Further vacancies in Secondary Schools will be advertised regularly during the coming months. Alternatively, candidates may be asked to be considered for appointment in the first instance to a pool of teachers in anticipation of further vacancies. If offered appointment they would then be asked to consider suitable vacancies when these arose at a later stage. If they so wish, candidates may apply both for individual posts and the "pool".

Students may obtain application forms from the appropriate officer at the College or Department. Other teachers may obtain forms from:

**THE CHIEF EDUCATION OFFICER,  
STAFFING BRANCH, ROOM 174, EDUCATION OFFICE,  
MARGARET STREET, BIRMINGHAM B3 3BU**

There are schemes for assistance with removal expenses, for advance of salary to teachers taking up first appointments, and for mortgage facilities in approved cases. N.B. An asterisk before the school name indicates a Social Priority School.

## COMMERCE AND ECONOMICS

- E.C.2 HODGE HILL SCHOOL, Bromford Road, S26 6HB (747 2610) (1,585 Mixed)  
Commercial subjects, including Shoplifting and Typewriting.  
E.C.3 SIR WILFRID MARTINEAU SCHOOL, Gravel Lane, S26 6UR (779 2011) (1,220 Mixed)  
Economics/Government, Temporary in the first instance for one year from September 1975.  
E.C.4 HARTFIELD SCHOOL, Hartfield Crescent, S27 7DD (777 8479) (1,150 Mixed)  
Commercial subjects—mostly typing—some shorthand and Office Practice, etc.  
E.C.5 VARDLEY WOOD SCHOOL, School Road, S14 4ER (474 2337) (875 Mixed)  
Commercial subjects—Typing, Commerce and Office Practice.  
W.C.1 WARRIN FARM SCHOOL, Oakfield Road, S44 9EW (372 6246) (1,850 Mixed)  
Commerce (Shorthand Typing, Accounts).  
W.C.4 GREAT BARR SCHOOL, Aldridge Road, S44 9NU (238 3338) (1,785 Mixed)  
Shorthand and Typing and Office Practice (two parts).  
W.C.5 PERRY BECHES SCHOOL, Bechoes Road, Q1, Barr, S42 4PY (380 4242) (1730 Mixed)  
Shorthand and Typing with Subsidiary Accounts and Lower School Mathematics.

## ART

- E.A.2 LONGMEADOW SCHOOL, Longmeadow Crescent, S24 7TE (747 2610) (870 Mixed)  
Bournville School, Griffing Brook Lane, S30 1QJ (473 3631) (1,500 Mixed)  
Drawing, Painting, Printmaking, Opportunity for C.S.E. 1, 2 and 3 level work.  
S.A.3 SHEPHERD COURT SCHOOL, Bentley Lane, S22 4HE (475 5181) (1,680 Mixed)  
Assistant in the Art and Craft Department, C.S.E. 1, 2 and 3 level courses.  
W.A.6 PERRY BECHES SCHOOL, Bechoes Road, S42 4PY (380 4242) (1,730 Mixed)  
Art with Subsidiary Music or English.  
W.A.9 PERRY COMMON SCHOOL, Faulkner's Farm Drive, S22 7XP (373 1647) (1,515 Mixed)  
Painting, Sculpture, Craft. The person appointed will have their own Art Room. An interest in light craft an advantage.

## CRAFT

- W.C.R.1 HOLTE SCHOOL, Wheeler Street, S19 2EP (829 7321) (1,285 Mixed)  
Technical Drawing and/or Woodwork.  
W.C.R.2 GREAT BARR SCHOOL, Aldridge Road, S44 9NU (238 3338) (1,708 Mixed)  
Craft/Organic.  
W.C.R.3 PERRY COMMON SCHOOL, Faulkner's Farm Drive, S22 7XP (373 1647) (1,510 Mixed)  
Metal Craft and/or Woodcraft. Willingness to teach Technical Drawing an advantage but not essential.  
W.C.R.7 SLEIGH HAMPDEN MIDDLEMORE R.C. COMB. SCHOOL, Matchless Lane, S17 6JJ (427 5119) (1,240 Mixed)  
Teacher for light metalwork and Combined Crafts. Facilities available for Auto Engineering and Woodwork.  
W.C.R.11 QUODSTON MAJOR SCHOOL, St. Francis St., D7 4ON (388 3735) (1,005 Mixed)  
Teacher for either Woodwork or Metalwork or both. Ability to help with Technical Drawing an advantage. Four specialist rooms.  
W.C.R.12 PERRY BECHES SCHOOL, Bechoes Road, S42 4PY (380 4242) (1,730 Mixed)  
Woodwork.  
W.C.R.13 BROADWAY SCHOOL, Perry Barr, S20 3DP (385 9444) (1,070 Mixed)  
Woodwork.  
W.C.R.15 HARTFIELD SCHOOL, Hartfield Crescent, S27 7DD (777 8479) (1,150 Mixed)  
Technical Drawing, Painting, Printmaking, Opportunity for C.S.E. 1, 2 and 3 level work.  
E.C.R.1 MIRFIELD SCHOOL, Leas Village, S25 9EG (793 3285) (839 Mixed)  
Technical Drawing and some boys' crafts or games.  
E.C.R.2 MIRFIELD SCHOOL, Leas Village, S25 9EG (793 3285) (839 Mixed)  
Technical Drawing and some boys' crafts or games.  
E.C.R.3 ALDERLEY SCHOOL, Alderley Road, S24 7JA (747 2647) (480 boys)  
Woodwork/Technical Drawing.  
E.C.R.4 HARTFIELD SCHOOL, Hartfield Crescent, S27 7DD (777 8479) (1,150 Mixed)  
Woodwork/Technical Drawing.  
E.C.R.5 HARTFIELD SCHOOL, Hartfield Crescent, S27 7DD (777 8479) (1,150 Mixed)  
Woodwork/Technical Drawing.  
E.C.R.6 HARTFIELD SCHOOL, Hartfield Crescent, S27 7DD (777 8479) (1,150 Mixed)  
Woodwork/Technical Drawing.  
E.C.R.7 MIRFIELD SCHOOL, Leas Village, S25 9EG (793 3285) (839 Mixed)  
Woodwork.  
E.C.R.8 WASHWOOD HEATH SCHOOL, Burney Lane, S25 2AS (782 7271) (1,730 Mixed)  
Sops, Craft, Woodwork, Metalwork, Technical Drawing and Automotive Engineering are all offered.  
E.C.R.9 BISHOP VESSEY'S GRAMMAR SCHOOL, Sutton Coldfield, S70 3HA (354 2823) (789 boys)  
Technical Drawing and Mathematics with ability to teach boys' games if possible.  
E.C.R.10 COLMAR FARM SCHOOL, Bistoft Road, South, S40 2YX (482 8172) (685 Mixed)  
Metalwork.  
E.C.R.11 MOUNT PLEASANT SCHOOL, Highgate, S12 8DS (448 4285) (1,850 Mixed)  
Metalwork and Woodwork.  
E.C.R.12 KING'S NORTON ROYAL SCHOOL, Northfield Road, S26 1DY (486 1386) (570 boys)  
Woodwork and Technical Drawing. Opportunity for C.S.E. work.  
E.C.R.13 ST. ALBAN'S C.E. SCHOOL, Angeline Road, S12 8DU (440 4824) (520 Mixed)  
Woodwork/Metalwork. Home Maintenance Course being developed.  
E.C.R.14 QUODSTON MAJOR SCHOOL, St. Francis St., D7 4ON (388 3735) (1,005 Mixed)  
Sops, Craft, Woodwork, Metalwork and Technical Drawing.  
E.C.R.15 ALDERLEY SCHOOL, Alderley Road, S24 7JA (747 2647) (480 boys)  
Metalwork and Woodwork.  
E.C.R.16 HODGE HILL SCHOOL, Bromford Road, S26 6HB (747 2610) (1,585 Mixed)  
Metalwork and Woodwork.  
E.C.R.17 MOOR END SCHOOL, Bromford Road, S26 6HB (747 2610) (1,585 Mixed)  
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E.C.R.86 QUODSTON MAJOR SCHOOL, St. Francis St., D7 4ON (388 3735) (1,005 Mixed)  
Metalwork and Woodwork.  
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E.C.R.204 KING'S NORTON ROYAL SCHOOL,























## SECONDARY Scale 2 Posts continued

### LEICESTERSHIRE

See for composite advertisement on page 94.

### LIVERPOOL

ST. FRANCIS XAVIER'S COLLEGE, Highfield Road, Liverpool, L25 8AG.  
Headmaster: J. J. West, M.A.  
Required for September, 1975—  
MASTERS for HEAD of ENGLISH (Scale 2).  
ASSISTANT MASTER for GEOGRAPHY.  
ASSISTANT MASTER for BIOLOGY.  
ASSISTANT MASTER for HISTORY.  
Apply as soon as possible to the Headmaster with the names of two referees.

### NORTH YORKSHIRE

BRISTOL GRAMMAR SCHOOL, Bristol Avenue, Harrogate, North Yorkshire, HG1 2JH.  
Headmaster: J. J. West, M.A.  
Required for September, 1975—  
MASTERS for HEAD of ENGLISH (Scale 2).  
ASSISTANT MASTER for GEOGRAPHY.  
ASSISTANT MASTER for BIOLOGY.  
ASSISTANT MASTER for HISTORY.  
Apply as soon as possible to the Headmaster with the names of two referees.

### REDRIDGE

London Borough of Redbridge, Redbridge High School, Redbridge, Essex, IG9 6JH.  
Headmaster: J. J. West, M.A.  
Required for September, 1975—  
MASTERS for HEAD of ENGLISH (Scale 2).  
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ASSISTANT MASTER for BIOLOGY.  
ASSISTANT MASTER for HISTORY.  
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### SOUTH YORKSHIRE

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# CITY OF COVENTRY

Apply by letter giving full details (age, qualifications, experience), with names and addresses of two educational referees to the Head Teacher of the School concerned, unless otherwise stated.

Required for Autumn Term, Assistant Teachers for:

ALDERMAN CLOWE SCHOOL AND COMMUNITY COLLEGE, Kingston Road (450 on roll)  
FACULTY OF MATHEMATICS and SCIENCE.

1. Teacher with a specialist qualification in Chemistry.
2. MATHEMATICS with some integrated Science in the Lower School.

New Scale 2 post available for experienced candidate, but college leavers welcome to apply.

BARR'S HILL MIXED COMPREHENSIVE SCHOOL, Radford Road (590 on roll, 130 in Sixth Form)  
Barr's Hill is at present a 3 F.E. girls' grammar school which in September will take its first mixed non-selective 8 F.E.—at first year level. College leavers welcome to apply for the following posts:

1. ENGLISH—to assist in teaching the subject throughout the school, interest in Drama an advantage. Scale 2 available for suitable applicant.
2. BIOLOGY—up to 'O' level and it possible 'A' level, together with General Science in the first three years. Scale 2 available for suitable applicant.

BINLEY PARK MIXED COMPREHENSIVE SCHOOL, Brandon Road (1,970 on roll)

1. CRAFT—to work in well equipped Technical Studies Department, scope for individual approach and opportunity to work in any branch of the department. There are well established G.C.E. CSE courses in Wood and Metalwork and made 3 C.S.E. V.M. course.

CAUDON CASTLE BOYS' COMPREHENSIVE SCHOOL, Ashford Road (1,500 on roll)

1. GEOGRAPHY—with environmental studies.
2. MATHEMATICS—specialist post.
3. ECONOMICS—'A' level and new C.E.E. social economics course.
4. ENGLISH—interest in Drama an advantage.
5. PHYSICAL EDUCATION—excellent specialist facilities including heated indoor swimming pool.

COUDON COURT MIXED COMPREHENSIVE SCHOOL, Northbrook Road (1,820 on roll, 150 in 6th Form and annex for 1st year pupils)

1. HOME RELATIONS and ADOLESCENT UNIT—New unit to be established for pupils needing individual programme and guidance, especially in 4th and 5th years.
2. MATHEMATICS—Mainly laboratory, developing course in computer science.
3. RELIGIOUS EDUCATION—Two specialist rooms, Community Service and integrated courses.
4. TECHNICAL DRAWING—to 'O' level, Specialist drawing offices. Scope to develop 'A' level courses.
5. TECHNICAL STUDIES—Wood or Metalwork. New work-shops, interest in car maintenance welcome.
6. ENGLISH—large department with several options for study. Two sixth form groups each year.
7. FRENCH—language laboratory—6th term work available if required.
8. FRENCH—Scale 2. Two posts available, one after a period of assessment to be made 2nd in Department. French taken to 'A' level, language laboratory.
9. HOME ECONOMICS. Recently completed Home Economics suite. Scale 2 for suitably qualified and experienced applicant.

ERNESTO GRANGE SCHOOL AND COMMUNITY COLLEGE, Pritchard Road (870 on roll)

New 8 F.E. Mixed Comprehensive, opened 1972 to provide cultural, leisure and educational opportunities for local people, now in a major phase of development on pleasant site in Easton outskirts of city.

1. HISTORY or SOCIOLOGY—for team starting community education project with Lower School, other teaching also available.
2. MATHEMATICS—ability to teach S.M.P. an advantage.

WHAM PARK MIXED COMPREHENSIVE SCHOOL, Even Lane (September, 1975, number on roll 1,400)

10 F.E. school, opened in 1970 with first-year pupils, with first Lower Sixth of approximately 100 in September, 1975. Later or Misses to teach the following subjects:

1. BIOLOGY—'O' level available now and, ultimately, 'A' level.
2. PHYSICS—lively department working towards M.U.S.E. 'A' level.
3. RELIGIOUS EDUCATION—interest in the NEW 'R.E.' Working with a broad based syllabus relevant to the multi-faith system, C.S.E. and G.C.E. examinations.
4. BOYS' CRAFTS—any combination of Woodwork, Metalwork and Technical Drawing.
5. BUSINESS STUDIES—Typewriting, Office Practice and Commerce.

## secondary opportunities with Nottinghamshire

### HEADS OF DEPARTMENT

NORTH BORDER COMPREHENSIVE  
Whitthorpe Road, Bircotes, Doncaster,  
Yorks., DN11 8EN

Headmaster: A. A. Haslam, B.Sc., Ph.D., F.R.A.S.  
Mixed: 700 (11-18)

HEAD OF SCIENCE DEPARTMENT  
SCALE 4

Biology preferred.

### BECKETT COMPREHENSIVE

Wilford Lane, Nottingham

Headmaster: T. Dillon, B.A.  
Mixed: 950 (11-18)

HEAD OF MUSIC—SCALE 2 or 3

According to experience and qualifications. Ability to teach Music to 'A' level.

This Comprehensive School, opening in September, 1975, will be created by the amalgamation of the Beckett School and Corpus Christi R.C. (Aided) Secondary School.

Applications, with full curriculum vitae and names of two referees, as soon as possible to the Headmaster, J. Monaghan, 25 Charnwood Grove, West Bridgford, Nottingham.

### BEESTON FIELDS SECONDARY BOYS'

Boundary Road, Beeston, Nottingham NG9 2RG

Headmaster: T. J. Hilton, B.A.  
Boys: 300 (11-18)

HEAD OF ENGLISH DEPARTMENT  
SCALE 2

Well established C.S.E. courses.

### THE DUKERIES COMPREHENSIVE

New Ollerton, Newark, Nottingham NG22 9TD

Headmaster: J. I. West, M.A.  
Mixed: 1,730 (11-18)

HEAD OF MATHEMATICS—SCALE 4

Candidates should have valuable experience in Comprehensive Education with determination firmly to lead a team in varied studies up to 'A' level and including C.S.E. Mode S. There is ample scope for imaginative and well-disciplined development of the learning of Mathematics throughout the purpose-built school.

### SCALE 2 & ABOVE

CHARNWOOD COMPREHENSIVE  
Farnborough Road, Clifton, Nottingham  
NG11 8LU

Headmistress: Miss M. E. Cooper  
Mixed: 650 (11-18)

MUSIC—SCALE 2

To be responsible for the subject throughout the school. The school has a tradition of good chapel work and there are opportunities for instrumental work.

### THE DUKERIES COMPREHENSIVE

New Ollerton, Newark, Nottingham NG22 9TD

Headmaster: J. I. West, M.A.  
Mixed: 1,730 (11-18)

GEOGRAPHY—SCALE 2

Second in a lively department. S.P.A. available.

ECONOMICS—SCALE 2

To teach up to advanced level; additional French or R.E. advantageous. S.P.A. available.

### FAIRHAM COMPREHENSIVE

Farnborough Road, Clifton, Nottingham  
NG11 8AE

Headmaster: R. J. Thom, M.A.  
Mixed: 1,700 (11-18)

REMEDIAL—SCALE 2

### NEWARK CHURCH OF ENGLAND

Barby Road, Newark, Nottinghamshire

Headmaster: J. R. Gold.  
Mixed: 630 (11-18)

MATHEMATICS—SCALE 2

To join a Mathematics Department of five. To take responsibility for one year group.

### SCALE 1

BRAMCOTE HILLS GRAMMAR  
Moor Lane, Bramcote, Beeston, Nottingham  
NG9 3GA

Headmaster: H. R. Lyons, B.A.  
Mixed: 1,450 (11-18)

FRENCH—SCALE 1

Must be prepared to teach throughout age range.

### CARLTON LE WILLOWS

Wood Lane, Gedling, Nottinghamshire,  
NG4 4AA

Headmaster: T. E. Dowman, M.A.  
Mixed: 1,770 (11-18)

Graduate for CHEMISTRY

To teach Nullfield Combined Science in years 1 and 2 and Nullfield Chemistry to 'A' level. Excellent facilities on campus site.

### KING EDWARD VI GRAMMAR

London Road, Retford, Nottinghamshire,  
DN22 6AU

Headmaster: T. E. Savage, T.D., M.A.  
Boys: 400 (11-18)

### ART

Ability to contribute to out-of-school activities essential.

### MAGNUS GRAMMAR

Earp Avenue, Newark, Nottinghamshire,  
NG24 4AB

Headmaster: Dr. N. Clayton, B.A.  
Boys: 570 (11-18)

MASTER FOR MATHEMATICS

To teach subject up to and including G.C.E. 'O' level. The initial requirement is for junior forms but there are prospects for further responsibility for both G.C.E. and G.C.E. work. An integrated traditional and modern course is followed.

### QUARRYDALE COMPREHENSIVE

Stoneyford, Stoneyford Road, Sutton-in-

Ashfield, Nottingham NG17 2DU

Headmaster: T. Gamble, M.A.

Mixed: 1,250 (11-18)

MUSIC—SCALE 1

### PORTLAND COMPREHENSIVE

Sparken Hill, Worksop, Nottinghamshire,  
S80 1AW

Headmaster: J. C. Garlon, B.A.  
Mixed: 1,180 (11-18)

### ENGLISH

Teaching to C.S.E. groups and children in the Lower School.

### RUSHCLIFFE COMPREHENSIVE

Boundary Road, West Bridgford,  
Nottinghamshire NG2 7BW

Headmaster: Dr. W. N. Littlejohns, M.A.  
Mixed: 1,571 (200 in Sixth Form)

MATHEMATICS

### TOP VALLEY COMPREHENSIVE

Top Valley Drive, Nottinghamshire, NG5 9AZ

Headmaster: B. G. Cooper, B.A.  
Mixed: 730 (11-18)

(1) FRENCH

Please state subsidiary subject.

(2) MISTRESS FOR GIRLS' PHYSICAL EDUCATION

New Sports Hall and other facilities.

### THE DUKERIES COMPREHENSIVE

New Ollerton, Newark, Nottinghamshire,  
NG22 9TD

Headmaster: J. I. West, M.A.  
Mixed: 1,730 (11-18)

(1) RELIGIOUS EDUCATION

With some Social Studies.

(2) HISTORY

Men or women graduates preferred. Chance of early Sixth Form work.  
S.P.A. available for both these posts.

### SPECIAL EDUCATION

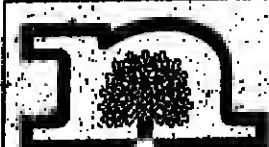
WOODLANDS DAY ES(N) SECONDARY

Beachdale Road, Nottingham NG8 3EZ

Headmaster: R. H. Batchelor, J.P.  
Mixed: 240 (12-18)

General Subjects throughout the school. Two posts, both Scale 1 plus Special Schools Allowance.

Unless otherwise stated please apply by letter giving details and the names of two referees to the Headteacher at the appropriate school.



## Nottinghamshire County Council











































## Bahrain Petroleum Company Limited AWALI SCHOOL

A suitably qualified Teacher, male or female, with at least 7 years experience, is required for September to teach general subjects to a 4th year form in the Junior Department. The children in this form are prepared for entrance, at age 11 plus, to independent schools in the U.K. Applicants should also be qualified to offer PE, Games and Craftwork.

Awali School, for children of expatriate staff of the Bahrain Petroleum Company Limited, has an enrolment of around 200 and is pleasantly situated in well appointed premises.

Salary (at present tax free) will be dependent on age, qualifications and experience and will be not less than £251 per month plus a differential cost of living allowance equivalent to £92 per month married or £69 per month single, with free air-conditioned accommodation and other utilities, free medical attention etc. Teachers' U.K. Pensions can be safeguarded. Candidates aged between 28-35 years should submit brief personal details in confidence, requesting an application form to:

Celtex (U.K.) Limited,  
Personnel Relations Department,  
30 Old Burlington Street,  
LONDON W1X 2AR.



## EDUCATION DEPARTMENT

### Youth Officers

£3,540-£4,092  
Soulbury Main Range 12-16

Youth Officers are required in the East Riding and Souththorpe Divisions of the Humberside Education Department.

Those are third tier appointments and the persons appointed will be responsible to a Senior Youth Officer. Applicants should be qualified, experienced Youth Workers.

### EAST RIDING DIVISION

The Youth Officer will develop Youth Work in the southern half of North Humberside excluding Kingston upon Hull. Re-organisation disbursements are under consideration.

### SCUNTHORPE DIVISION

The Youth Officer will develop Youth Work in either Glenford or Scunthorpe. Re-organisation disbursements are under consideration.

Further information and application forms are available from Director of Education, Further Education Section, County Hall, Beverley, North Humberside. Completed forms should be returned within two weeks of the appearance of this advertisement.



An oil-rich British Protectorate, in South-eastern Asia, where the rate of development, increased by the wealth of Petroleum exports, has brought about a vital need for Technical education.

## REFRIGERATION/AIR CONDITIONING

Senior Technical Instructor  
£3,400-£5,720 (There is no personal Income Tax in Brunei)

The Jett Boldish School of Engineering at Kuala Belait requires a Senior Technical Instructor to prepare full-time students for CGLI Course No. 827 and to assist in the teaching of simple applied Maths and Science.

Applicants, with CGLI Certificate No. 257 (New or Old Scheme), must have completed a full apprenticeship, followed by a minimum of 3 years' industrial or teaching experience.

Excellent rewards include a salary in the scale £3,400-£5,720, a 25% gratuity, free passage, subsidised accommodation, board and education allowances, leave and an interest-free car loan. The school is situated near superb beaches, ideal for those interested in sailing, water skiing, deep sea diving and fishing and has excellent facilities for outdoor activities and athletics.

Please apply for further details to: Recruitment Section, TETOC (Council for Technical Education and Training for Overseas Countries), 35/37 Grosvenor Gardens, London SW1W 0BS (Phone Number 01-828 6751 Ext. 44). Closing date for receipt of applications June 13th.

Recruitment for Technical Education Overseas  
**tetoc**

## ADULT EDUCATION Appointments continued

**DERBYSHIRE**  
EDUCATION COMMITTEE  
ALLEN PRINCIPAL, temporary vacancy for September 1975 in the Adult Education Department. Salary £3,275 per annum. Applications invited for this post, which will be vacant from September 1975 until January 1976. The holder of the post is responsible for the Adult Education Department in the Borough of Erewash. The holder of the post will be responsible for the Adult Education Department in the Borough of Erewash. The holder of the post will be responsible for the Adult Education Department in the Borough of Erewash.

**KIRKLEES**  
METROPOLITAN COUNCIL  
EDUCATION COMMITTEE  
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**LANCASHIRE**  
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**LONDON**  
INNER LONDON EDUCATION AUTHORITY  
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**DEVON**  
EDUCATION COMMITTEE  
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**FRANKFURT ENGLISH STUDY CENTRE**  
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## LONDON INNER LONDON EDUCATION AUTHORITY

**WOLVERHAMPTON**  
EDUCATION COMMITTEE  
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**CITY OF MANCHESTER**  
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**OXFORDSHIRE**  
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## CITY OF LIVERPOOL EDUCATION COMMITTEE

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## WARRICKSHIRE EDUCATION COMMITTEE

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**CITY OF MANCHESTER**  
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## THE TIMES EDUCATIONAL SUPPLEMENT 25.5.75

## EDUCATION DEPARTMENT

### LEADER (MALE or FEMALE)

At Woodford Street Youth Centre with effect from 1st September, 1975.

Salary within Range 3 of J.N.C.  
£2,577 to £2,913

The person appointed will join a team of youth workers and will work with them in the development of the area.

APPLICATION FORMS are obtainable from the Chief Personnel Officer (Tel. W211), Civic Centre, Millgate, Wigan, Closing date 30th June, 1975. Candidates must be members of the Council either directly or indirectly will disqualify applicants.



## County of Cleveland

## EDUCATION DEPARTMENT

Applications are invited for the following vacancies in the Youth and Community Service:

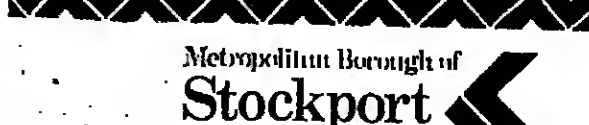
**SECOND YOUTH TUTOR**—Burnham Scale 2 required at Brierley Youth Centre, Brierley Lane, Harrogate.

**YOUTH TUTOR**—Burnham Scale 3 required at Merska Youth Club, Bydala Secondary School, Marlborough Road, Merska.

In approved cases, financial assistance with household removal expenses will be available. The Council may provide mortgage facilities. Temporary housing accommodation for married couples may be available in approved cases, within the County area.

Closing date 8th June, 1975.

Application forms and further details are available from the County Education Officer, Education Offices, Woodlands Road, Middlesbrough, Cleveland TS1 3BN.



## RECREATION & CULTURE DIVISION

### AREA YOUTH WORKER

**NORTH AREA**  
(JNC 4-8 £2,892-£3,228 Inc.)  
(Starting point in accordance with age, qualifications and experience.)

It is essential that the applicant be qualified in accordance with JNC for Youth and Community Work requirements. Duties in accordance with JNC for Youth and Community Workers, i.e. 10 sessions per week of which not more than 8 sessions per fortnight should be evening sessions.

Application forms can be obtained from: The Chief Personnel Officer, The Old Rectory, Churchgate, Stockport, 061-490 6139

## London Borough of Redbridge Education Department

### Assistant Manager

Wanstead Sports Centre

Grade: AP 4-5 (£3,097-£3,691 including London Weighting and Threshold Payments)

This new sports complex, due open in September 1976, is adjacent to a large comprehensive school and includes a Sports Hall and four squash courts. There is also a gymnasium and open air pool on the site.

Applicants should be suitably qualified and able to assist with the day to day management of the Centre.

Application forms and further particulars are available from the Chief Education Officer, Education Office, P.O. Box No. 11, 60-65 High Road, Ilford, Essex IG1 1NN, and should be returned by 8th June, 1975.

## YOUTH AND COMMUNITY SERVICE continued

**WARRICKSHIRE**  
EDUCATION COMMITTEE  
ALLEN PRINCIPAL, temporary vacancy for September 1975 in the Adult Education Department. Salary £3,275 per annum. Applications invited for this post, which will be vacant from September 1975 until January 1976. The holder of the post is responsible for the Adult Education Department in the Borough of Erewash. The holder of the post will be responsible for the Adult Education Department in the Borough of Erewash. The holder of the post will be responsible for the Adult Education Department in the Borough of Erewash.

**CITY OF MANCHESTER**  
EDUCATION COMMITTEE  
ALLEN PRINCIPAL, temporary vacancy for September 1975 in the Adult Education Department. Salary £3,275 per annum. Applications invited for this post, which will be vacant from September 1975 until January 1976. The holder of the post is responsible for the Adult Education Department in the Borough of Erewash. The holder of the post will be responsible for the Adult Education Department in the Borough of Erewash. The holder of the post will be responsible for the Adult Education Department in the Borough of Erewash.

**OXFORDSHIRE**  
EDUCATION COMMITTEE  
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**LANCASHIRE**  
EDUCATION COMMITTEE  
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**DEVON**  
EDUCATION COMMITTEE  
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**FRANKFURT ENGLISH STUDY CENTRE**  
EDUCATION COMMITTEE  
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## The British Council

invites applications for the following posts:

### British Schools, Montevideo (Uruguay)

Post 1—Head of Arts Department, including History and English teaching; Immigrant Post 2—Teacher of Geography, History; graduate or college-trained teacher with 2 years' relevant experience. Men (without children) preferred; help with drama or Rugby appreciated; knowledge of Spanish desirable. Salary: £1,800 p.a. (Scale 1); £2,100 p.a. (Scale 2). Benefits: overseas allowance; accommodation subsidy; medical scheme; employers' portion of UK superannuation. Three-year contracts, renewable. 75 DS 124-125

### Three Technical Instructors (Qatar)

Regional Training Centre, Doha Industrial Instrumentation Power Station and Distillation Plant Operators Electrical Trades Candidates, men only, UK citizens with British educational background, must have relevant CGLI Final Certificate and several years' teaching and industrial experience. Salary: £3,575 rising to £4,550 p.a., tax free. Benefits: free accommodation, electricity and water; car and equipment allowances; terminal gratuity; two months' annual passage-paid leave. Three-year contracts, renewable. 75 AD 52-54









Education and  
Cultural Services Committee

## AREA CATERING ADVISER

Salary £2,937-£3,447 per annum plus threshold payments of £228 p.a. (Soulbury 9-13)

A Catering Adviser is required for the Central Somerset (Bridgewater) area to complete a team of four. Candidates, with appropriate professional qualifications, would be welcomed from the general field of welfare and institutional catering.

Application forms and full details of this post are obtainable from the Chief Education Officer, Stelling (NT) Section, Education Department, County Hall, Taunton, to whom applications should be returned by Monday, 2nd June.

## SENIOR SCHOOL MEALS ORGANISER

Salary in Southbury Senior Range £3,447-£3,999 per annum. Plus London weighting and threshold payments.

Candidates must possess an appropriate qualification in Institutional Management or Domestic Science and have suitable experience in large scale catering, preferably in the School Meals Service.

Essential user car allowance will be paid.

Application form and further particulars from the Chief Education Officer, Regal House, London Road, Twickenham, Middlesex, returnable by 9th June, 1975.

London Borough of  
RICHMOND UPON THAMES

## THE COUNTY OF SOUTH GLAMORGAN Education Department

### SENIOR ADMINISTRATIVE ASSISTANT (REF 81) (DEVELOPMENT AND BUILDINGS) (APS £3,213-£3,432)

The successful applicant will be a member of the Forward Planning Team. His work will involve the assessment of educational needs arising from new housing developments or new policies. He will be expected to take responsibility for the preparation, analysis and interpretation of educational statistics and must be proficient at report writing. Experience of similar work will be an advantage.

Application forms are available from the Personnel Officer, County of South Glamorgan, County Headquarters, Newport Road, Cardiff (Tel. No. 459022, Ext. 3412). Completed application forms must be returned by 6th June 1975.

## City of Salford

### EDUCATION DEPARTMENT ASSISTANT EDUCATION OFFICER Schools £4,953-£5,508-PO4

Applications are invited from men and women with administrative and teaching experience for this third tier post the duties of which include responsibility for the staffing of the authority's schools, allocation of pupils to schools, the meetings of managers and governors and general policy planning.

POST REFERENCE 1083/TE5

This post is permanent, superannuable and subject to medical examination. Commencing salary will reflect experience and qualifications. Please write for an application form to the Personnel Manager, Civic Centre, Salford, M27 2AD, to whom they should be returned by 6th June, 1975.

## CAREERS OFFICERS—

for Older/  
Able Pupils—Escher  
and Further  
and Higher Education—Reigata

Candidates should have a degree or equivalent qualification and be qualified for and experienced in the work of the Careers Service.

Salary at Escher—AP4/5 (£2,925-£3,432) and at Reigata SO1 (£3,555-£3,804) both plus Surrey Allowance (£180 p.a.).

Car mileage and subsistence expenses payable and Surrey offers generous relocation expenses and mortgage facilities in approved cases. Temporary accommodation may be available. Closing date two weeks after appearance of this advertisement.

Further details and application forms from the County Education Officer, County Hall, Kingston upon Thames, KT1 2DJ. Tel: 01-548 1050 Ext. 3484.



## Senior Administrative Assistant

Salary: £3,816-£4,065 per annum inclusive

The Authority seeks a mature, experienced and qualified person to take on the role of office manager in charge of the central secretarial functions of the Education Department. This key co-ordinating role involving liaison with all branches of the Service, the maintenance of internal office routines and documentation control requires an understanding of office management skills, tact and flexibility.

The council offer 100 per cent removal expenses, legal and estate agent fees up to £500 and lodging allowances. A flexible working hours scheme is in operation.

Application forms and further details available from the Chief Education Officer, Hadley House, 79/81 Uxbridge Road, Ealing W5 5SU. Forms to be returned within fourteen days of the appearance of this advertisement.



## TRAINEE CAREERS OFFICER

Applications are invited for the post of Trainee Careers Officer in the County Careers Service. Applicants should preferably have a degree or similar qualification as well as being able to offer at least twelve months full-time employment. After a short period of induction, the successful applicant will be seconded on full salary to a full-time course of professional training leading to a diploma in career guidance. Any appointment to this post will be conditional upon the acceptance of the person appointed on to a suitable course of training.

Salary will be on Trainee Scale with a maximum of £2,154 starting point depending upon age, qualifications and experience. The minimum starting point for a graduate will be £1,839. In addition other miscellaneous expenses during the course will be paid, including tuition, and board and lodging.

On successful completion of a course of training the person appointed will be expected to accept a careers officer post on a minimum £2,286 rising to a maximum of £2,769.

Application forms, together with further details, are available from the Personnel Officer, County Secretary's Department, County Hall, George Row, Northampton, Tel: 04333 Ext: 5237, and should be returned by 5 June, 1975.

## COUNTY OF AVON

Education Service

### ASSISTANT EDUCATION OFFICER (SCHOOLS)

Salary PO2 (1-5) £4,953-£5,508

This is a fourth tier post, open to men and women, and offering promising career prospects. The officer will work in a team responsible for the management and development of school provision and personnel with organisational issues, the assessment of needs, staffing, and the maintenance of direct relationships with schools. Primary and Secondary teaching experience is an essential qualification, previous administrative experience desirable. Assistance with removal expenses and legal fees where appropriate.

Further details and application form returnable by 9th June, from Director of Personnel and Management Services (Tel. Bristol 298555), Avon House, The Haymarket, Bristol BS9 7DE. Please quote reference number ED 124.



## BOROUGH OF SUNDERLAND

EDUCATION DEPARTMENT

CAREERS SERVICE

### SENIOR CAREERS OFFICER

APS (£3,213-£3,432)

Applications are invited from suitably qualified applicants for the above post.

Candidates should have experience in the Service, and should, if possible, hold the Diploma of the Youth Employment Service Training Board or the Diploma in Vocational Guidance.

Application forms and further details obtainable from the Director of Education, Careers Office, 15 John Street, Sunderland, SR1 1HT. Closing date 6th June, 1975.

Two Hat & Civic Centre, Sunderland SR2 7DN

## Education Welfare in Northamptonshire

At the moment there are two vacancies in the service which represent an opportunity to work in an area of particular educational interest. The number of school children is increasing rapidly in Northamptonshire and the present staff complement of 50,000 is expected to exceed 130,000 by 1981. It is currently proposed that the final stages of comprehensive reorganisation of secondary schools will begin to take effect not later than September, 1976.

In each case the officer appointed must hold a current driving licence and be a car owner. A car allowance will be paid and there will be the opportunity of a loan towards the purchase of a car.

### DEPUTY CHIEF EDUCATION WELFARE OFFICER

£2,858-£3,432

An experienced Welfare Officer is required for this senior position. In addition to the normal duties of the welfare officer, the successful candidate will have a particular involvement in team procedures. The post is graded AP4/5 although progression on to AP5 will be dependent upon the holder of the post possessing the Certificate of Social Work Officers (L.O.T.B.) or a similar qualification having completed the L.O.T.B. Senior Education Welfare Officers Course. Initial starting salary will also depend on qualifications and previous experience.

### EDUCATION WELFARE OFFICER

£2,154-£2,769

The successful applicant will be based at Kettering and he or she will be required to act as Clerk to Governors and members of certain County Schools in addition to carrying out normal duties. Applicants should preferably have a social work background or be familiar with the education system. Further details and application forms are available from the Personnel Officer, County Secretary's Department, County Hall, George Row, Northampton, Tel: 04333 Ext: 5237. Completed forms must be returned by 6th June, 1975.



## ADMINISTRATION Local Education Authority continued

**NEWHAM**  
London Borough of  
EDUCATION DEPARTMENT  
CAREERS OFFICER  
Salary Scale £2,858-£3,432  
Applications are invited from men and women for the post of Careers Officer in the Borough of Newham. The successful candidate will be responsible for the management and development of the careers service in the Borough. The post is graded AP4/5 and the salary scale is £2,858-£3,432. Applications should be sent to the Personnel Officer, Education Department, County Hall, Newham, London E16 1AA. Closing date 6th June, 1975.

**LANCASTER**  
LANCASTER COLLEGE OF EDUCATION  
Applications are invited from men and women for the post of Assistant Education Officer in the Lancaster College of Education. The successful candidate will be responsible for the management and development of the college. The post is graded AP4/5 and the salary scale is £2,858-£3,432. Applications should be sent to the Personnel Officer, Lancaster College of Education, Bailrigg, Lancaster LA1 4YW. Closing date 6th June, 1975.

**BERKSHIRE**  
HATFIELD SCHOOL  
Applications are invited from men and women for the post of Assistant Education Officer in the Hatfield School. The successful candidate will be responsible for the management and development of the school. The post is graded AP4/5 and the salary scale is £2,858-£3,432. Applications should be sent to the Personnel Officer, Hatfield School, Hatfield, Bedfordshire AL9 7QJ. Closing date 6th June, 1975.

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## WOLVERHAMPTON BOROUGH COUNCIL

EDUCATION DEPARTMENT  
CAREERS OFFICER  
Salary Scale £2,858-£3,432  
Applications are invited from men and women for the post of Careers Officer in the Borough of Wolverhampton. The successful candidate will be responsible for the management and development of the careers service in the Borough. The post is graded AP4/5 and the salary scale is £2,858-£3,432. Applications should be sent to the Personnel Officer, Education Department, County Hall, Wolverhampton, West Midlands WV1 1AA. Closing date 6th June, 1975.

**LANCASTER**  
LANCASTER COLLEGE OF EDUCATION  
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HATFIELD SCHOOL  
Applications are invited from men and women for the post of Assistant Education Officer in the Hatfield School. The successful candidate will be responsible for the management and development of the school. The post is graded AP4/5 and the salary scale is £2,858-£3,432. Applications should be sent to the Personnel Officer, Hatfield School, Hatfield, Bedfordshire AL9 7QJ. Closing date 6th June, 1975.

**NEWHAM**  
London Borough of  
EDUCATION DEPARTMENT  
CAREERS OFFICER  
Salary Scale £2,858-£3,432  
Applications are invited from men and women for the post of Careers Officer in the Borough of Newham. The successful candidate will be responsible for the management and development of the careers service in the Borough. The post is graded AP4/5 and the salary scale is £2,858-£3,432. Applications should be sent to the Personnel Officer, Education Department, County Hall, Newham, London E16 1AA. Closing date 6th June, 1975.

**LANCASTER**  
LANCASTER COLLEGE OF EDUCATION  
Applications are invited from men and women for the post of Assistant Education Officer in the Lancaster College of Education. The successful candidate will be responsible for the management and development of the college. The post is graded AP4/5 and the salary scale is £2,858-£3,432. Applications should be sent to the Personnel Officer, Lancaster College of Education, Bailrigg, Lancaster LA1 4YW. Closing date 6th June, 1975.

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